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JULY 1—DECEMBER 15, 1944

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and subjects see pages 2749-2752*



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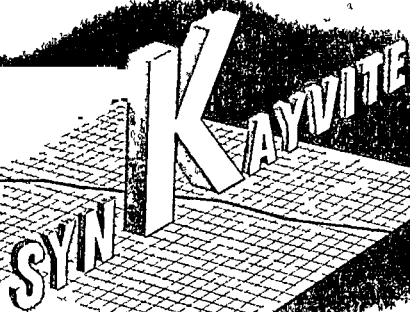
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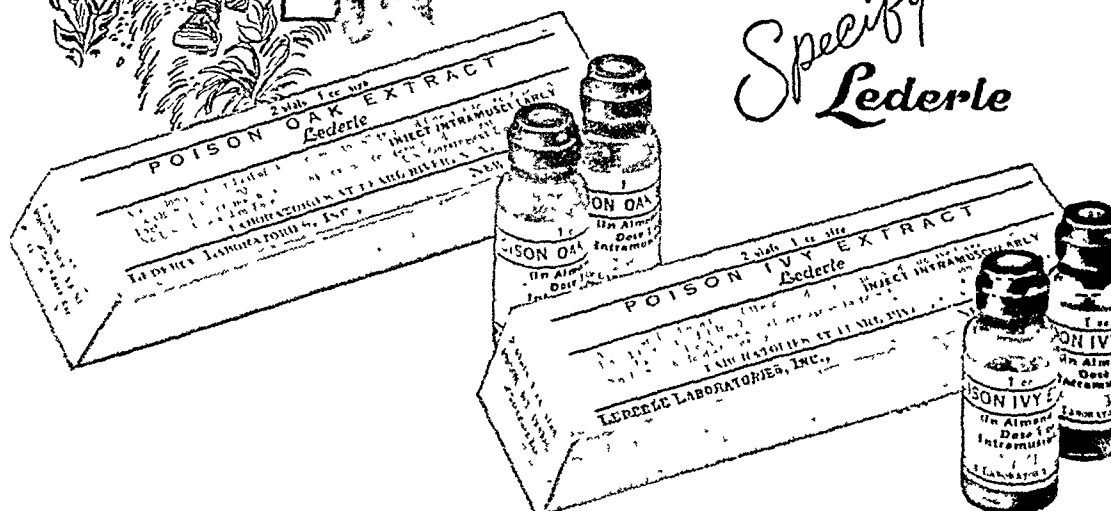
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- (1) New and Nonofficial Remedies American Medical Association, Chicago, Illinois, 1942; p. 29.
- (2) Shelmire, R. J. *Invest. Dermat.*, 4:237 (Oct.) 1941.
- (3) Blank, J. M., and Coca, A. F.; *J. Allergy* 7: 552 (Sept.) 1936.



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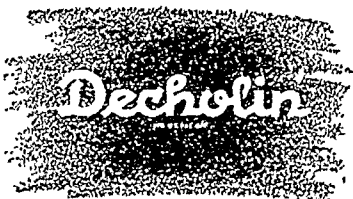
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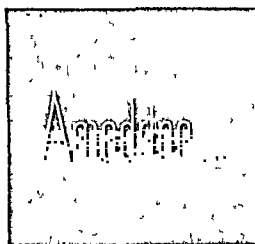
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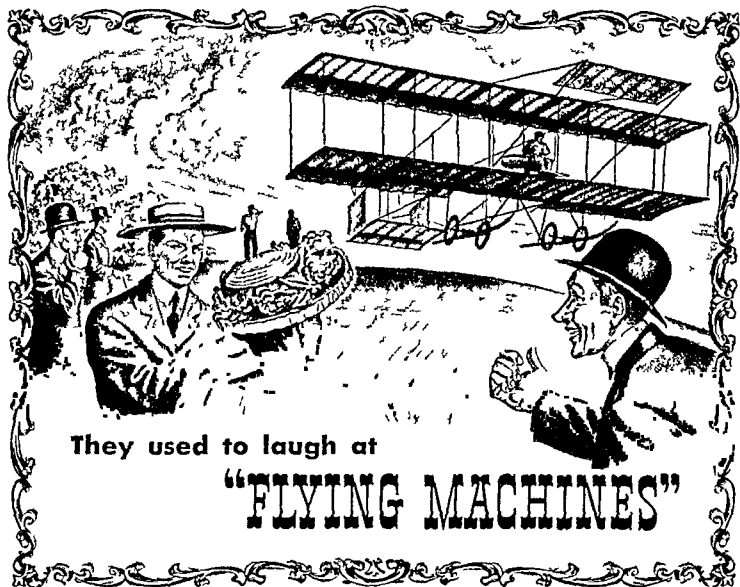
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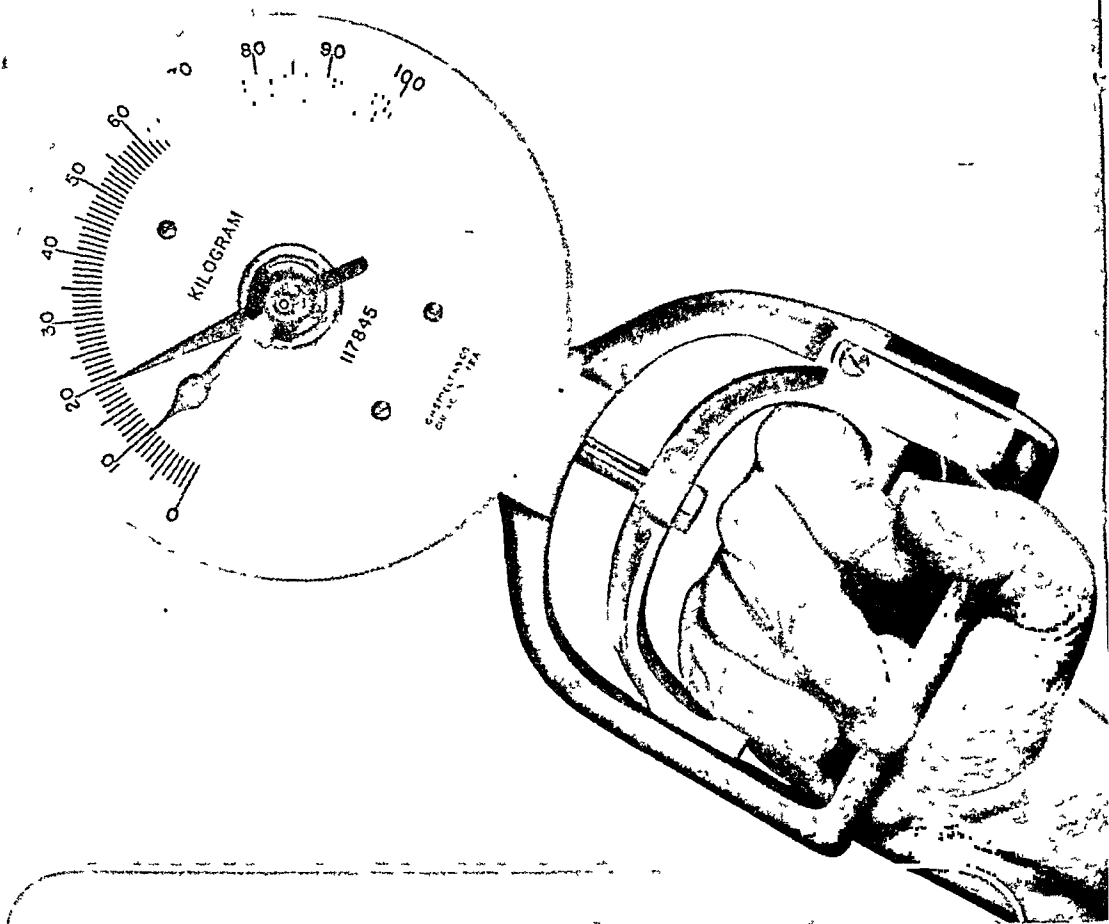
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The Grip Dynamometer is employed routinely as a measure of muscular function. One of the earliest signs of response to Ertron therapy is an increased strength of muscular activity.

The measure of effectiveness of anti-arthritic medication includes an appraisal of its effect on systems other than the articulatory system.

Thus, such responses as increased appetite measured by weight gain, and improved muscular action measured by ability to grip or lift, are evidence of systemic therapy in a systemic disease.

# ERTRONIZE THE ARTHRITIC

To *Ertronize* the arthritic patient, employ ERTRON in adequate dosage over a sufficiently long period to produce beneficial results. Gradually increase the dosage to the toleration level. Maintain this dosage until maximum improvement occurs.

*Ertronize* early and adequately for best results.

**ERTRON\*** alone—and no other product—contains electrically activated, vaporized ergosterol (Whittier Process).  
Supplied in bottles of 100 and 500 capsules.

**ETHICALLY PROMOTED  
NUTRITION RESEARCH  
LABORATORIES  
CHICAGO**

## ERTRON PARENTERAL

For the physician who wishes to reinforce the routine oral administration of Ertron by parenteral injections, Ertron Parenteral is available in packages of six 1 cc. ampules. Each ampule contains 500,000 U.S.P. units of electrically activated, vaporized ergosterol (Whittier Process).



\*Reg. U. S. Pat. Off.



# ERTRON



# J. E. HANGER INC.



Established  
80 years

Inventors and Manufacturers  
**ENGLISH WILLOW**

and

**DURAL LIGHT METAL  
ARTIFICIAL LIMBS**

Automatic knee lock available  
for above knee amputation

*Expert fitting—Superior design  
Quality construction*

**104 FIFTH AVE.  
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And other Cities.

*Write for Literature*

**EFFECTIVE THERAPY**

IN

*Otitis Media*

Requires Analgesia

Bacteriostasis, and

Dehydration of the Tissues.

*Auralgan*

THE DOHO CHEMICAL CORPORATION  
New York - Montreal - London



NESTLÉ'S MILK PRODUCTS ...  
WORLD'S FIRST CHOICE FOR BABIES



feeding  
sections  
furnished to the lally

# R Pediforme

## FOOTWEAR



## for THE ENTIRE FAMILY

Pediforme Shops are not "Ladies' Shops" or "Men's Shops" or "Infant's Shops"—they are equipped to serve your patient of any age and either sex.

From the prenatal care of the mother's feet to rocking chair age, there is Pediforme footwear available to supplement your treatments; or, to fill your prescription for preventing foot troubles

Our seven busy shops are evidence that the confidence of the profession continues to be justified.

Convenient sources

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BROOKLYN, 322 Livingston St  
843 Flatbush Ave

HEMPSTEAD, L. I. 241 Fulton Ave

NEW ROCHELLE, 843 North Ave  
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HACKENSACK, 299 Main St

# SOPRONOL Inhibits FUNGOUS INFECTIONS



**MONILIA**  
albicans



**EPIDERMOPHYTON**  
Inguinale



**MICROSPORUM**  
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**TRICHOPHYTON**  
purpureum

... As demonstrated by clinical investigation  
in a leading United States hospital

In tests on a large number of hospital patients, Sopronol was found to exert an *inhibitory* rather than a destructive action on the fungus. The advantages of this method are obvious. Sopronol, taken readily into the fungous organism, prevents its development and spread. Hence the infection is quickly brought to an end, but without the customary skin irritation caused by poisonous by-products resulting from strong fungicides in contact with the mold. The chemical basis of Sopronol is sodium propionate.

## ALL SUPERFICIAL MYCOSES (RINGWORM)

Prescribe Sopronol for: Tinea Pedis, Tinea Cruris, Tinea Capitis, Tinea Glabrosa, due to "the dermatophytes"—Trichophyton, Epidermophyton, Microsporum, Monilia (Candida) and pathogenic aspergillae infections. Sopronol is non-irritating, non-keratolytic, non-toxic.

Available in alcoholic solution, powder  
and water soluble ointment bases



MYCOLOID LABORATORIES, INC., Little Falls, New Jersey

Please send me descriptive literature and reprints as checked:

- ☐ "Sodium Propionate in the Treatment of Superficial Fungous Infections"  
☐ "The Fungistatic and Fungicidal Effect of Sodium Propionate on Common Pathogens"

N 2

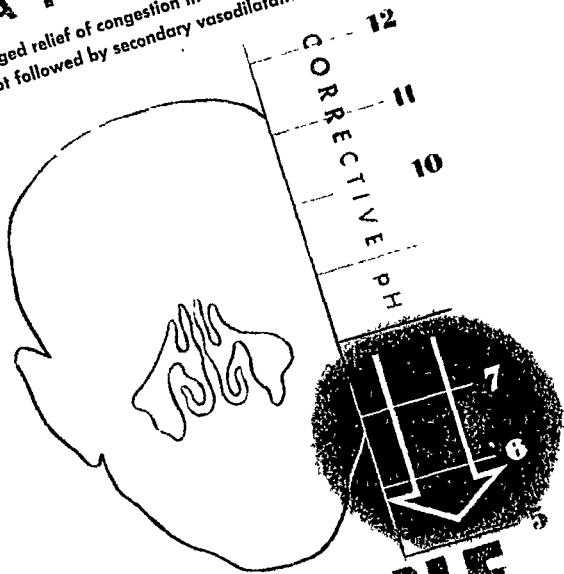
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# HAY FEVER

Prolonged relief of congestion in allergic rhinitis  
... not followed by secondary vasodilatation



## PRIVINE

hydrochloride  
Aqueous, isotonic solution, buffered at pH 6.2  
readjusts alkaline pathologic secretions to  
normal acid range, favors ciliary action, facilitates healing.

Trade Mark Reg. U. S. Pat. Off.

*a Ciba Product*

Ciba Pharmaceutical Products, Inc., Summit, N. J.

# WHEN THE *Body Rebels* AGAINST THE DICTATES OF THE YEARS

The natural estrogenic substances, parenterally administered by the physician, not only appear to be more effective in overcoming adverse menopausal symptoms, but contribute psychotherapeutically by necessitating personal contact with the physician. Semestrin, derived from pregnant mares' urine, hence containing estradiol as well as estrone, proves as economical as it is effective, in the menopausal syndrome, gonorrheal vaginitis in children, senile vaginitis, frigidity.



## SEMESTRIN



Semestrin, in 1 cc. ampuls is available in the following potencies: 2,000; 5,000; and 10,000 International Units; 2,000 International Units per cc. in 30 cc. vials, and 10,000 International Units per cc. in 10 cc. vials.

**THE S. E. MASSENGILL COMPANY**  
Bristol, Tenn.-Va.

NEW YORK • SAN FRANCISCO • KANSAS CITY



# *Summer Heat . . .*

## *Phagocytosis . . .*

### *Protein Need . . .*

The efficacy of phagocytosis is definitely linked to adequate protein intake. As environmental temperature rises, the diet-percentage of protein apparently must rise proportionately, to maintain phagocytosis at optimum.\* Meat is a rich source of proteins, and its proteins are of highest biologic quality, the RIGHT KIND for every bodily need, including phagocyte activity.



The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

\* Commenting editorially on the work of Mills and Cottingham (J. Immunol. 47:503 [Dec.] 1943), THE JOURNAL states: "They found that after five and one-half weeks maintenance at 68 F. rats showed a maximum phagocytic activity on diets containing 18 per cent of protein. There was a definite decrease in phagocytic activity with an increase or decrease from this level. In rats maintained at 90°F. the phagocytic optimum diet was 36 per cent of protein. Thus adequate protein intake would seem to be fully as important as adequate vitamin intake to maintain optimal phagocytic activity (resistance to microbic infections). The immunologic optimum protein intake is higher in the tropics than in temperate climates. . . . This demonstration of important variations in phagocytic functions is a pioneer contribution to basic immunologic theory and may have wide clinical implications." (J.A.M.A. 124:1203 [April 22] 1944.)

**AMERICAN MEAT INSTITUTE**  
MAIN OFFICE, CHICAGO...MEMBERS THROUGHOUT THE UNITED STATES

# HAY FEVER...

"THE LATEST SUCCESSFUL THERAPY"



**Formula**

Vitamin C.....	125	Mgm
Vitamin B <sub>1</sub> .....	1.5	Mgm
Vitamin A.....	2500	USP U

**"Super-Seal" CONSTRUCTION**

*separates the fat-soluble vitamin A from the water-soluble B<sub>1</sub> & C, assuring best absorption of each factor in its proper medium and environment.*

- ... Certainty of Response
- ... Faster Results
- ... Better Absorption
- ... No-After-Taste

**Dosage**

4 to 8 per day, gradually reduced maintenance dose of 2.

Available in bottles of  
40s—100s & 500s

*Marketed Ethically*



ASIDE from the important nutritional factor, as determined by various investigators, the pharmacological action of massive doses of vitamin "C," fortified with A & B<sub>1</sub>, is a consideration not to be overlooked in the unusual results attainable in cases of *HAY FEVER and other allergies: Asthma, Eczema, Contact Dermatitis, Urticaria, and various food reactions.*

VITALLERGY (Super-Seal) is an ideal conveyor of adequate potencies of those factors that have been found successful in a series of important tests.\*

*For your HAYFEVER cases and other ALLERGIES ...*



provides UNUSUAL therapeutic efficacy.

\* LITERATURE AND SAMPLES SENT UPON REQUEST.

**THE TRAUTMAN COMPANY**  
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**IN RESTRICTED DIETS:**

Peptic and Gastric Ulcers

Post-surgical

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Pregnancy

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# NEO MULTI-V CAPSULES

provide, in each capsule, *all* clinically established vitamins in amounts safely above basic adult daily requirements\*—yet not wastefully in excess of the average patient's needs. Modest in cost, economical in even prolonged usage. Ethically promoted of course. White Laboratories, Inc., Pharmaceutical Manufacturers, Newark 7, N. J.

## NEO MULTI-VI CAPSULES

Each Capsule Contains:

Vitamin A 5000 U. S. P. Units

Vitamin D 500 U. S. P. Units

Thiamine Hydrochloride, 1.5 mg.  
U. S. P. 2.5 mg.

Riboflavin 1 mg.

Pyridoxine Hydrochloride 1 mg.

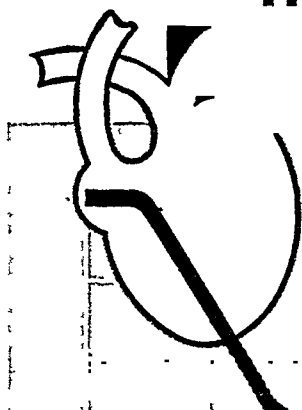
Calcium Pantothenate 20 mg.

Nicotinamide 50 mg.

Ascorbic Acid, U. S. P.



# HYPERTENSION ~ ~ ~ *under SAFE Control*



## PROLONGED LOWERING OF PERIPHERAL RESISTANCE

### *with* **NITRANITOL**

Brand of Mannitol Hexanitate

*I*n the rehabilitation of the hypertensive patient, treatment should aim at gradual, sustained vasodilation rather than a sharp drop in blood pressure. Only in this way is it possible to minimize the danger of circulatory shock and avoid possible arterial damage.

**LONG LASTING**—Nitrinitol has a vasodilating action lasting  $1\frac{1}{2}$  times as long as erythryl tetranitrate, 4 times as long as sodium nitrite, and over 12 times as long as glyceryl nitrate.

**SAFE**—Nitrinitol can be used over ex-

tended periods of time without toxic manifestations. It does not produce nausea, and headache is rarely encountered.

Supplied in the form of scored tablets containing  $\frac{1}{2}$  grain mannitol hexanitate, Nitrinitol is available at prescription pharmacies in bottles of 100 and 1000.

### **NITRANITOL with PHENOBARBITAL**

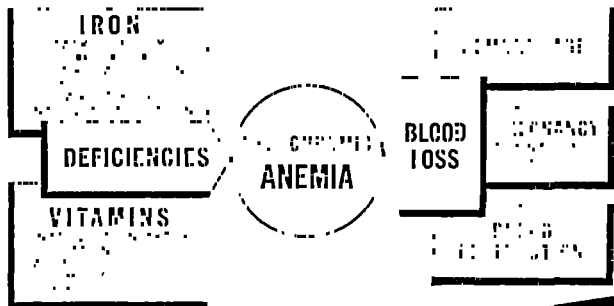
Each scored tablet contains  $\frac{1}{2}$  gr. mannitol hexanitate and  $\frac{1}{4}$  gr. phenobarbital. Bottles of 100 and 1000.



Trademark "Nitrinitol"  
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THE WM. S. MERRELL COMPANY

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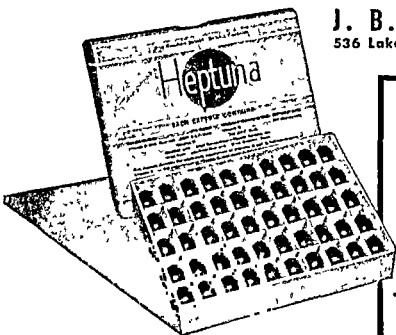


## *Treating the Patient* IN HYPOCHROMIC ANEMIA

The nutritional deficiency which frequently causes hypochromic anemia is rarely restricted to iron alone. Insufficient iron intake usually is linked with deficiencies of other nutrients vital to blood normalcy. But whether the anemia is caused nutritionally or by blood loss, a vicious cycle generally comes into operation: Anemia engenders anorexia and hypochlorhydria, thus inhibiting adequate intake and absorption of needed nutrients; their lack, in turn increases the

severity of the anemic state. In therapy, to aim at the iron deficiency alone means to treat merely a symptom; treating *the patient* calls for more complete measures.

Heptuna provides not only an adequate amount of highly available iron but, in addition, the fat-soluble vitamins A and D, and the B-complex vitamins (partly derived from a vitamin-rich liver extract and yeast) for optimal iron utilization, for promotion of appetite, and for improved endurance.



**J. B. ROERIG & COMPANY**  
536 Lake Shore Drive • Chicago 11, Illinois

# Heptuna

EACH CAPSULE CONTAINS:  
Ferrous Sulfate..... 45 gr.



## Remember when you didn't believe in signs?

No healthy boy in his right mind ever let a sign interfere with a good swim. Nor have poison ivy or poison oak ever drawn back from his bared skin to let him enjoy that swim without any unpleasant after effects.

However, those youngsters who are susceptible can find a definite measure of protection in 'IVYOL' poison-ivy extract; and 'IVYOL' has decided value in the treatment of Rhus dermatitis as well as being a prophylactic agent. It has been clinically demonstrated that it is of definite benefit in relieving the irritating symptoms of ivy and oak poisoning.

'IVYOL' poison-ivy extract contains purified principles of poison ivy (1:1000) in sterile olive oil.

Administration by deep, intramuscular injection is relatively painless because of the bland vehicle.

Developed by the Mulford Biological Laboratories of Sharp & Dohme and accepted by the Council on Pharmacy and Chemistry of the American Medical Association, 'IVYOL' extract is supplied in packages containing one or four 0.5 cc. vials, each vial representing a single dose.

**Sharp & Dohme, Philadelphia 1, Pa.**

**PROPHYLAXIS:** Contents of one vial, intramuscularly, each week for four weeks.

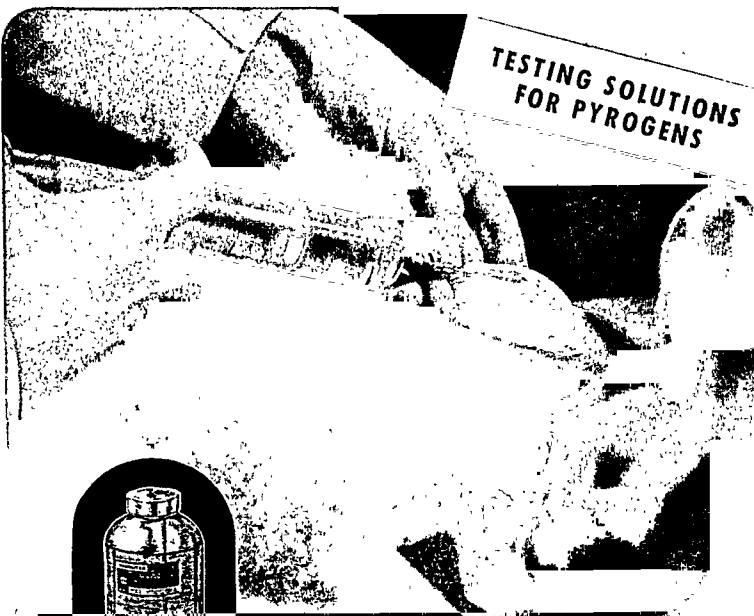
**TREATMENT:** Contents of one vial, intramuscularly, every 24 hours until symptoms are relieved.

# 'IVYOL'

*Poison Ivy Extract (MULFORD)*

One of the 21 rigid tests and inspections constantly

# *Safeguarding Baxter Solutions*



This is Isotonic Solution of Sodium Chloride  
to restore fluid and salt balance.

PRODUCTS OF  
**BAXTER LABORATORIES**

Glenview, Illinois • Acton, Ontario • London, England

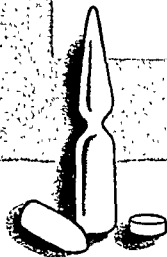
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Distributed east of the Rocky Mountains

**AMERICAN HOSPITAL SUPPLY COMPANY**

CHICAGO • NEW YORK • PHILADELPHIA

## DIETHYLSTILBESTROL



### *Reference Standard of Estrogen Effectiveness*

WITH the confirmation of findings of Dodd and his associates that diethylstilbestrol possesses estrogenic properties in amazingly small dosages, that it is highly effective when given orally, that its toxicity is low in therapeutic quantities, and with the realization of its low cost, a new standard of estrogenic effectiveness was established.

Since then, other synthetic estrogens have been announced and derivatives of various natural estrogens have been introduced. In nearly every instance when reports of these later studies have appeared, one generally finds therein reference to activity, toxicity, relative freedom from side-effects, and cost of the new preparation compared with diethylstilbestrol. Thus far no subsequent preparation has surpassed Dodd's original synthetic estrogen in all these criteria.

Diethylstilbestrol Squibb is available in a variety of dosage forms:—tablets for oral administration; solution in oil for intramuscular use and as vaginal suppositories. It offers

convenient, effective estrogenic therapy at very low cost. Thus thousands of women at a critical time in their lives may have the advantages of hormonal therapy which for economic reasons was previously restricted to a few.

For physicians who prefer naturally occurring estrogenic substance unmodified by hydrogenation or esterification, Amniotin in Oil is available in capsules for oral administration, in 10-cc. vials for intramuscular use and as vaginal suppositories.

*Literature to physicians only. Address Professional Service Dept., 745 Fifth Ave., New York 22, N. Y.*

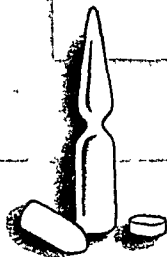
### **E·R·SQUIBB & SONS**

*Manufacturing Chemists to the Medical Profession Since 1859*

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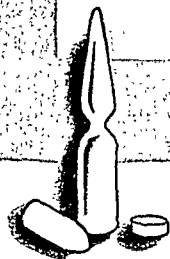
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# NEW YORK STATE JOURNAL OF MEDICINE

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VOLUME 44

JULY 1, 1944

NUMBER 13

## Editorial

### A Presidential Greeting

*"To the Ladies of the Woman's Auxiliary to the Medical Society of the State of New York.*

Greetings, and a pledge of real interest and co-operation!

"Do you talk to your husband about his county society meeting? You know it occurs on a regular stated date, from four to ten times a year. The county medical society is the foundation stone of Organized Medicine and by the same token it is the foundation of our present system of modern medical care. In medicine we strive for personal service and family consultation—right here is where you come into the picture—to see to it that the doctor in your family gets to his county medical meeting! For if he doesn't do that—really, now, how much good can you do in the Woman's Auxiliary? You have become acquainted with the influence that organization on sincere principles can have for the good of the public health. Against the white light of our truth and ideals, properly displayed, no one can long delude the American people with false propaganda on medical and hospital care. See that your husbands attend their county society meetings!"

"Did you ever think what a 90 per cent attendance at the county society medical meeting would mean to the community—especially to the officials of government who make, execute, and interpret our laws?"

Thus Herbert H. Bauckus, President of the Medical Society of the State of New York, spoke to the wives of the doctors at the 1944 Annual Meeting.

"When comparatively few members regularly attend, there is altogether too much work and responsibility placed on the few and pretty soon there arises the idea that mostly cliques run the affairs of medicine. This business of the practice of medicine extends deeply into the far realms of our social life—it is a complex problem indeed—it cannot be

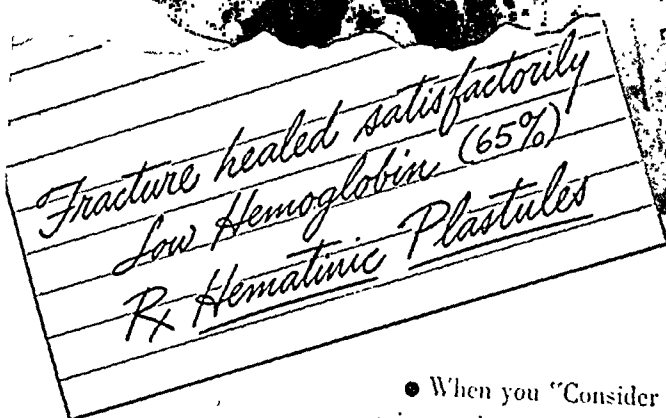
properly done by the few. We are a democracy first and last, as an example of adherence to the principles on which this great country developed its love and respect for liberty the medical profession stands among the most faithful. Our doctrine of free choice of physician—is it not just that?"

Just now, especially now, has it become evident to educators and the top scientific men of medicine that the selection of good medical students, high educational requirements for the graduate in medicine, high standards for the active practitioner are directly the responsibility of Organized Medicine, as is also legislation protective of the public health, legislation against cultism and quackery, antivivisection, antiscrum, antivaccination laws, the establishment of high standards embodying the formation of specialty boards, and the rating and inspection of medical schools and hospitals. The health of the worker is guarded as it could be under no other system, by our participation in the Workmen's Compensation Act.

"When someone, and he may be a doctor, attempts to belittle our organization, tell him some of these things. Our principles have been salutary for the human race since long before the time of Hippocrates, and when people have temporarily departed from them they did not do so well for themselves."

"I want to make it clear that even if your doctor doesn't always attend or support his county society he benefits from it just the same, and so do his patients!"

"The State Medical Society sponsors many excellent programs in the various parts of the State. These keep the physicians abreast of the most important newer advances in medicine and surgery. The Society has scientific district branch meetings annually in eight areas, and assists any county society in preparing a program in any of the departments of medicine. It sends its JOURNAL twice a month to all its membership, including those in the military services. It has an annual meeting at which topics of broad interest are presented to the



*Fracture healed satisfactorily  
Low Hemoglobin (65%)  
Rx Hematinic Plastules*

• When you "Consider the Blood," and find hypochromic anemia, you undoubtedly want to see that the patient is supplied quickly and efficiently with iron.

The iron supplied in Hematinic PLASTULES is *ferrous iron*—the ideal form for quick absorption and conversion into hemoglobin. It stays in the ferrous form because it is hermetically sealed in soluble capsules that prevent oxidation.

And, as Hematinic PLASTULES quickly dissolve in the stomach, the ferrous iron in semi-fluid state is rapidly assimilated.

Available Plain or With Liver Concentrate; in bottles of 50, 100, 1000. The Bovine Company

**HEMATINIC  
PLASTULES**

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practicing physicians. It encourages the writing of scientific papers based on original study and in this respect has been the proving ground for many of the leaders of medicine.

"The parent organization of all county medical societies is the American Medical Association. It publishes the *Journal of the A.M.A.*, the most comprehensive and democratic medical publication in the world today. The A.M.A. maintains a most valuable educational bureau also. If the doctor will read the *Journal of the American Medical Association* and the *NEW YORK STATE JOURNAL OF MEDICINE* regularly, and will attend faithfully the clinics, lectures, and demonstrations provided by his county, State, and national organizations, he will keep himself in the best informed class of medical practitioners. That is just what you want, isn't it? I think it is about what everybody wants except the radical social philosophers who have the urge to revolutionize present-day medicine. I imagine our voluntary education programs irk and annoy them. And we didn't just start those programs since we heard of the Wagner-Murray-Dingell bill—you can read about our educating one another in the Oath of Hippocrates.

"We are trying to have a better understanding with the public, too. Committees of your county and State Societies are meeting with many lay groups interested in the general problems of this

complicated life. The A.M.A. publishes *Hygeia* so that people, children and adults, will better understand health. Medicine also has radio programs that tell the truth about health and disease. No one can gainsay that we do not try sincerely to prevent the diseases from which we make our living.

"Your husband, the doctor, will greatly help his community if he goes regularly to the hospital staff meetings. This is voluntary education, too—it is one effective way of teaching the doctor. For you know the doctor must ever be taught both the old and the new—sometimes the distinction is not a difference. The conduct of a hospital is to a large extent a medical problem. In spite of the urgency of his active practice the doctor should also maintain a lively interest in hospital management. Almost all hospital cases originate in the home call or the office. The physician then continues the care of his patient under the advantages of the hospital. But don't forget the word 'continues.' It is important.

"Well, good ladies, we can't stand too much improvement all of a sudden. But we can stand up with the boys and attend our own county medical society meetings.

"See to it that we do just that. Will you?"

"HERBERT H. BAUCKUS, M.D.  
President, Medical Society  
of the State of New York."

## Independence Day

Physicians, prominently among others, used to be concerned with the establishment and maintenance of civil liberties and the rights of the individual. Benjamin Rush perhaps typifies for us the American physician of the Revolutionary period of our history, to whom, with others of the signers of the Declaration of Independence, we owe the present tenuous enjoyment of our now somewhat abridged civil rights.

We are again about to celebrate Independence Day. It follows, in this third year of our participation again in a war of liberation, D Day, June 6, 1944. In the invasion of Europe and in the fighting all over the world American physicians, young and older, are serving their country with the armed forces. At home, the rest are serving industry and the civilian population to the limit of their ingenuity and their capability. In the Congress and in the various state legislatures some—perhaps too few—physicians are laboring politically to secure to the people such remnants of their individual rights as total war, political ambition, unwarrantable seizure of power by the Federal government, and the people's indiffer-

ence have not yet swept away. Shall their labors be in vain?

This year of 1944 is fraught, in our view, with the danger of losing at home what we fight for abroad. The winds of our destiny are blown with straws. It is time, if ever, to speak, as, at the time of this writing, our troops are committed to action in Europe. It is fitting that the occasion for this writing should be Independence Day, 1944.

The newspapers of June 5 and 6, soon to be notable days in our history, contain the following significant items:

"Washington, June 5.—Many people are going to be asked soon to decide whether the country will be any better off under Republican than Democratic rule. If the record as a whole of the Republican Party in Congress thus far is to be taken as a criterion, maybe the country will decide to settle down to a continuation of the Democrats.

"For the Republicans have stood idly by while civil rights have been taken from the citizen. They have failed to use their power as a minority to secure the liberties which they will presently tell the people the Democrats are taking away.

"There is, for instance, the simple matter of court review of acts of the executive agencies. Here is an issue of transcendent importance. It's an issue

any child who has studied our form of government can understand. . . ."

Thus David Lawrence<sup>2</sup> speaks on the subject of the decision of the U.S. Circuit Court of Appeals that War Labor Board orders are not reviewable by the courts. This is of significance when we consider the increasing number of medical activities which are under the control of executive agencies, both State and Federal.

As medicine pushes with vigor its medical expense indemnity insurance plans we read:

"Washington, June 5.—The Supreme Court, up-setting a 75-year-old decision, ruled today in a 1-to-3 opinion that the insurance business may constitute interstate commerce and is, therefore, subject to Federal regulation under antitrust provisions of the Sherman Act and under the National Labor Relations Act.

"The decision in the antitrust case was reached on a government appeal from an action by the Federal District Court for Northern Georgia dismissing Federal antitrust proceedings against one hundred and ninety-six stock fire insurance companies operating in six southeastern states—a case which brought Attorney General Francis Biddle personally before the Supreme Court for the only time this term. The decision paves the way for similar Justice Department actions already planned against other companies.

"However, congressional attempts specifically to exempt insurance companies from interstate commerce regulation will be pushed with renewed vigor, in view of the Supreme Court's decision, it was made clear in congressional and other quarters this afternoon."

From the May 15, 1944, issue of this JOURNAL we reprint in part the threat to medicine as "private enterprise" of the implications of the recent Montgomery Ward case.

"The recent seizure by the government of the Montgomery Ward Company, a concern which, to the ordinary mind, is not one producing munitions or war material of any kind, seems indicative of the attitude of government toward private enterprise in general.

"In that a certain portion of the institution of medicine still remains 'private enterprise,' it is directly concerned in this case, and in its outcome. As Mark Sullivan says:

"Much depends on whether the people—the average man and every man—can be made to see how far and deep the Ward case goes. To do this calls for re-education of our people in principles of govern-

ment and law and individual rights—principles so long taken for granted that the average person has come to think of them as a part of the permanence of nature, like the weather and the rotation of the seasons.

"A new generation of Americans must learn that these principles had to be established by struggle and now must be defended by vigilance."

And from the same issue<sup>5</sup> we note again the report of the American Bar Association's Committee on the medical and hospital provisions of the Wagner-Murray-Dingell bill:

"The bill fails to safeguard the rights of patients, citizens, hospitals, or doctors with respect to disputes arising or rights denied through the arbitrary or capricious action of one man.

"The bill fails to provide for any appeal to any court from the action of the Surgeon General.

"The vicious system whereby administrative officials judge without court review the actions of their subordinates in carrying out orders issued to them is extended in this bill to a point foreign to our system of government and incompatible with the adequate protection of the liberties of the people. . . ."

We note the hostile attitude of some of the press toward medicine in the matter of the report of the Moreland Act Commission, and its failure to credit the profession with the overwhelmingly honest and efficient medical service to injured workmen under the Workmen's Compensation Act in this State. In effect, this was a trial of the profession by publication and indictment, and not by due process of law—a sorry spectacle.

We note again the significance of the arbitrary action of the Children's Bureau of the Department of Labor in the matter of maternity and infant care for soldiers' dependents.

Who is to combat these cancerous erosions of civil liberties, this arrogant domestic trampling upon the rights of the people? The medical and some lay publications are doing what they can. The pitifully few representatives of the profession in Congress and the State legislatures are attempting to dam the flood with too few and too inadequate fingers in the leaking dike. But the winds of our destiny, laden with these cited and other straws, are piling up the waters dangerously behind the leaking dam of our Bill of Rights.

Independence Day, 1944, will have decreasing significance for us hereafter unless every physician, every citizen, every uneasy taxpayer exerts his utmost vigilance, makes his wishes heard by his representatives, and snaps out of his indifference as to what is happening under his very nose.

What is a man profited, if he shall gain the whole world, and lose his own soul?

<sup>1</sup> June 6, 1944.

<sup>2</sup> New York Evening Sun, June 5, 1944.

<sup>3</sup> Herald Tribune, June, 6, 1944.

<sup>4</sup> New York State J. Med. 44: 1094 (May 15) 1944.

<sup>5</sup> *Ibid.*, page 1039.

## Immunity and Body Proteins

The belief is gaining ground that antibodies are globulins specifically modified so as to counteract the noxious properties of specific antigens.<sup>1</sup>

Further proof has been gathered that antibodies are elaborated by the macrophages, which are an integral part of the reticulo-endothelial system. While still attached to the parent cell, these immune bodies are called sessile antibodies. When produced in superabundance, the sessile antibodies have been shown to be shed by the macrophages into the circulation as floating or circulating antibodies ready for mobilization at any site where they are most urgently needed.<sup>1</sup> Blood rich in specific antibodies has proved to be of great value prophylactically or therapeutically, as in the instance of convalescent serum.

Since antibodies are probably modified globulins, their synthesis is linked with globulin formation. Mounting evidence indicates the dependence of the formation of immune bodies upon the synthesis of proteins from amino acids. Deficiency of body protein may be due to starvation, dietary insufficiency, metabolic diseases such as nephrosis, disorders of the liver, or to diseases which interfere with the absorption of adequate nutritive elements, as is frequently encountered in chronic intestinal diseases.<sup>2</sup> Such protein impoverishment may be reflected in a serum protein subnormal qualitatively and quantitatively,

which it now appears is a striking index of impaired resistance to infection.<sup>1-3</sup>

The cellular factor of immunity resides in the phagocytes and their capacities of phagocytosis. It is significant and striking that phagocytic powers are also impaired in a protein-poor organism.<sup>4</sup> Vitamin deficiencies also tend to create a similar decline in phagocytic powers and antibody formation. In depressing environments, such as the tropics, the need is great for maximal protein and vitamin intake, which must be optimal if adequate immunity is to be maintained.

The proof is accumulating that reserve stores of protein, vitamins, and other essential nutrients are the building stones of the bulwarks against infection. Immunologic studies continue to confirm the physiologic aphorism enunciated by Graham Lusk many years ago: "Functional activity of living matter is primarily due to arrangement of proteins in protoplasm." The problem is related to war and famine, for optimal nutrition of the masses is the basis of resistance against plagues and epidemics which at such times threaten to spread throughout the world.

<sup>1</sup> Cannon, P. R.: J. Immunol. 44: 107 (June) 1912.

<sup>2</sup> Madden, S. C., and Whipple, G. H.: Physiol. Rev. 20: 194, (Jan.) 1940.

<sup>3</sup> Elman, R., and Heifitz, C.: J. Exper. Med. 73: 417, (Mar.) 1941.

<sup>4</sup> Mills, C. A., and Cottingham, E.: J. Immunol. 47: 493, (Dec.) 1943.

## Military Surgeons to Meet

The program for the Annual Meeting of the Association of Military Surgeons of the United States to be held at the Pennsylvania Hotel, New York City, November 2 to 4 inclusive is being rapidly completed. In addition to addresses by the Surgeons General of the Army, Navy, and U.S. Public Health Service and by other distinguished guests, there will be formal papers, panel discussions, and scientific and technical exhibits on the latest advances in military medicine.

# Medical Society of the State of New York

## Minutes of the House of Delegates—May 8–9, 1944

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# House of Delegates

## Minutes of the Annual Meeting

[Continued from page 1872, June 16 issue]

### Afternoon Session

May 8, 1944

#### Section 50

#### Report of Reference Committee on Report of Planning Committee for Medical Policies

**SPEAKER BAUER:** Ladies and Gentlemen, the Planning Committee for Medical Policies happened to be under my chairmanship; therefore, I don't deem it either fitting or proper that I should be in the Chair while this report is being considered. I will, therefore, yield the gavel to the Vice-Speaker.

**DR. JOHN J. MASTERS, Kings:** Mr. Vice-Speaker and Members of the House, I want to apologize for the length of this report. I wish I could read it by title, but that is not possible. However, I am not going to read the entire report as submitted by the Committee, because I assume that the delegates have already read it. We have tried to brief it as much as possible.

A careful reading of the report of this Committee shows they have given much thought and study to the important problems confronting us at this time. They deserve our congratulations for their excellent work and for the clearness and conciseness of their report, considering the number and importance of the subjects covered. In fact, nothing relating to the practice of medicine and our relations to the hospitals, industry, nursing, voluntary medical insurance, and medical education has been omitted from their report.

The report covers the following subjects, and we will discuss them in that order:

1. General Comments on Problems Involved
2. Compulsory Sickness Insurance
3. Wagner-Murray-Dingell Bill
4. Hospital Insurance and Medical Service
5. Regional Centers for Diagnostic Aid
- 6.
- 7.
- 8.
- 9.
10. Continuance of Committee

the cost. The Committee concludes there is no one answer to the problem and anyone who has given much study to the subject must agree with them.

Certain groups stress the need for medical care among the poorly housed, clothed, and fed section of the population, using the economic situation of these people as an argument for the overthrow of our system of medical practice, overlooking the fact that the removal of these economic barriers should be an end in itself and not used as an argument for a different system of medical care.

2. **Compulsory Sickness Insurance.**—The first

compulsory Gibbs Bill, State in 1911. In many countries, but nowhere has it given as high a level of medical care and of health as exists in the United States. The poor wages and lower standards in many countries, United States is very, most parts of the world. It is difficult to understand why some people are so insistently urging compulsory insurance just because it is in operation in other parts of the world.

Compulsory sickness insurance is mass production. The report and the quality of the work has been constantly improved, but there is ample evidence that the quality would degenerate under the compulsory plan.

3. **Wagner-Murray-Dingell Bill.**—So much has been written about this bill that it is unnecessary to

ness insurance in general, and disapproval of the Wagner-Murray-Dingell Bill. We approve of their recommendation.

4. **Hospital Insurance and Medical Service.**—less includes expenses Nursing care, (3) Medical and surgical service.

For the horizontal patient the last item is usually the smallest. The first two should be covered by prepayment plans for hospital care and the latter two by medical expense indemnity insurance. It would probably be a money-saving investment for

doctors' services.

Your Committee concurs with the action of the American Medical Association in opposing such services as pathology, radiology, anesthesiology, and any other medical service in a hospital insurance plan, and proposes that such services be insured for under a medical care plan.

The Committee is wholly in accord with the extent to which medical services should be covered. The reasons which were adopted by the House of Dele-

gates of the American Medical Association in June, 1943. It feels that these medical service features properly belong in a medical expense indemnity insurance plan.

With reference to the use of the insurance principle in the case of welfare patients, it is recommended that the Council suggest to the Welfare Department that it consider the possibility of the use of the insurance principle rather than the present system. We approve of the recommendation.

5. *Regional Centers for Diagnostic Aid.*—The Committee has made a very comprehensive study of the necessity of the location and the supervision of the centers in rural areas. They believe they can be created and operated in carefully selected areas with no damage to a free and unfettered practice of medicine. Since no specific recommendations are made at this time, we will not go into the details of their report. They do, however, recommend that a special committee or subcommittee be appointed by the President to make a survey of New York State to determine the need for such a program and the areas to be cared for. The suggested methods of operations are, of course, tentative, and if the survey indicates the desirability of establishing such diagnostic centers, then the details of management would have to be worked out carefully. Your Reference Committee recommends the appointment of such a committee by the President.

6. *Industrial Medicine.*—Industrial medicine, with all of its possible ramifications in the future, deserves and even demands immediate intensive study and cooperation by Organized Medicine to the end that this relatively recent special field shall not become a problem child.

The Council on Industrial Health of the American Medical Association has done a vast amount of constructive planning in this field, and has set up carefully planned programs for committees on industrial health, not only in the various state societies, but also one for the county society.

The program of the American Medical Association for state and county societies is carried in detail in the Planning Committee's report, so it is unnecessary to go into the details of this program at this time.

It may be truthfully said that if an active committee in the county medical society carried out in full the program recommended for such a society, it would result in far-reaching benefits to the industry, to labor, and to Organized Medicine. The innumerable problems that arise, involving the interests of each group, would have a common meeting ground where these might be resolved by cooperation and education. Farsighted policies could be outlined that would result in satisfaction to industry and labor and a true authority to Organized Medicine in matters of health.

We urge the State and various county medical societies to give particular attention to this rapidly growing field of industrial medicine so that it will not become a problem child on our hands. The Planning Committee recommends that the Committee on Public Health and Education increase the time allotted to industrial medicine in its education program. Since at the present time there is a definite shortage of physicians trained in industrial medicine, the State Society Subcommittee on Industrial Medicine is urged to stimulate the activity of county society committees in carrying out the above program of the American Medical Association, and to form committees in areas where they are needed. The State Department of Labor has been doing a splendid piece of work in this field, and it might be

increased and extended if the medical staff of the Department of Labor were increased so that members might assist county society committees in coordinating their work with the definite work of the Department. It is recommended that the Council bring this matter to the attention of the proper state authorities.

The Long Island College of Medicine in Brooklyn gave a course in industrial medicine in 1942 and 1943. These courses were well attended, and we would recommend that the Committee on Public Health and Education urge the other medical colleges in this State to consider the establishment of such courses. We request the approval of the recommendations in this part of the Report of the Planning Committee.

VICE-SPEAKER HALE: You have all heard this portion of the report of the Reference Committee, which is largely informative. If there is no objection, I will entertain a motion that it be accepted so far.

DR. GEORGE W. KOSMAK, *New York*: I so move. . . . The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. . . .

7. *The Nursing Problem.*—DR. MASTERSON: The Committee believes that a more general understanding on the part of physicians of the problems of the nursing profession will result in mutual benefit to both the nurse and the doctor. In support of this belief it may be added that the Committee has explored the possibility of better understanding on such subjects as nursing educational background and training of the nurse, and whether a differentiation on this basis will ease the burden of the high cost of nursing care. These are subjects which have been studied and which concern the medical profession vitally.

Because the destiny of the medical profession is allied with that of the hospital, and that of the hospital with the nurse, it is imperative that a relationship which recognizes the interdependence of the physician, hospital, and nurse, be established. It appears possible, if too great an error is made in bringing together these three services, or if the correlation does not meet with public approval, that one or all of the services may suffer by the encroachment of public control through government or insurance channels. It is apparent that the leaders of the nursing profession recognize this trend as a possibility. They are at this time concerned also because there is a trend in nursing away from the professional toward the vocational status.

(In other words, now a large majority of the nurses immediately upon graduation or a short time thereafter go into industrial medicine, or into the public health service, the county health service, and the State health service, and so forth, so that is one of the reasons for the shortage of nurses at this time for really professional nurse service.)

This is the only part of the Report of the Planning Committee that we shall read in full:

"Members of the New York State Nursing Council for War Service have expressed a desire to have a planning group within the nursing profession which might work with a medical committee in studying the changing order.

"It is, therefore, the opinion of the Planning Committee that a continuation of the study of the changing trend in nursing in relation to medicine be authorized, and that during the coming year, now that the contacts have been made, a closer and more active exploration of the field be

made by joint meetings with a committee representing the nursing profession and, if possible, one representing hospital administration."

**8. Medical Education.**—As war measures, certain fundamental changes have been virtually forced upon medical education. Army and Navy training programs in general have been planned to provide training for the largest possible number of men in the shortest possible time. It is apparent that the present wartime program not only handicaps a student during his medical course and subsequent hospital training but brings him into the medical

The Committee feels that it is of the utmost importance that careful attention be given to the re-establishment of satisfactory standards of educational programs just as soon as the war needs will permit. This does not mean that the medical schools should blindly follow their prewar programs. On the other hand, the present upset in medical education programs offers opportunity for careful evaluation and postwar planning by the individual

deplors the apparently various states not only to the healers of the healing art to treat the public but to grant them full licensure for the practice of medicine and surgery.

The Planning Committee recommends that this section of the report be referred to the Committee on Public Health and Education, and we approve of that recommendation.

A more detailed report on medical education was prepared by Dr. Herman G. Weiskotten, who was

one interested in the subject. We recommend that the report of Dr. Weiskotten also be referred to the Committee on Public Health and Education.

I so move.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

**9. Voluntary Medical Insurance.**—DR. MASTERSON: The American people desire and demand a plan or plans for the prepayment of medical care costs. This demand must be met.

The Committee feels that voluntary medical insurance is one of the answers to this demand. The principle of this type of insurance has been approved by the American Medical Association and by this

experience has been accumulated. Two of the rea-

"Educate physicians of New York State by means of the JOURNAL and other publications.

"Report regularly to the Council and to the Committee on Public Relations and Economics.

"Make available material for the Publicity

"Meet with county societies in which no plans are operating, to the end that New York State may be wholly covered by voluntary prepayment plans.

"Meet with Departments of Social Welfare and Insurance and other official agencies of the New

"Meet with representatives of the Hospital Association of New York State and with the Hospital Insurance or Blue Cross organizations.

"Study and report on commercial insurance plans and policies.

"Meet with industry, labor, management, that is sponsoring medical care programs.

"Establish a control bureau as a clearing house for existing plans.

"Study possibilities and procedures for a statewide plan directed and controlled through the Medical Society of the State of New York."

(Some job! I don't think they ought to tell the duties of the man for this job until after they have hired him.)

personnel to Council.

Bureau in view

the war it would not be possible to establish such a Bureau

with proper financial support within the dues income of the Society without cutting down on some of the

other necessary activities. This is an emergency for which our general funds are available; and it is

recommended that for the period of the war the financial support of this Bureau should come out of

funds other than the general dues income, if the Trustees find it necessary.

Report of the Finance Committee

Your Committee concurs in the recommendation

as

director with the necessary personnel, and whose

duties are enumerated in the report. The selection of the director and personnel to operate this Bureau

shall be made by the Council, and the Board of Trustees should appropriate the money necessary for the establishment of this Bureau.

We further suggest that the Director of this Bureau should be thoroughly conversant with insurance practices, and should be a physician if possible.

therefore, urges the House to authorize the reappointment of the Committee on the same basis as

last year, namely, that it consist of the President, President-Elect, the Secretary, the Speaker, the

Chairman of the Board of Trustees or a member of the Board designated by him, and six members to

the necessary personnel. The Committee recommends following duties:

"Correlate the activities of the American Medical Association, other states, and other countries.

be appointed by the Speaker, the Committee to elect its own Chairman and Recorder.

We recommend continuance of Committee, and this is signed by the Reference Committee consisting of Harry V. Bull, Peter M. Murray, Stephen R. Monteith, Warren Woodpep, and John J. Masterson, Chairman.

I move the adoption of the report as a whole.

.... The motion was seconded. ....

VICE-SPEAKER HALE: We will have to take that last part in two actions. The first has to do with the matter of the establishment of a Bureau of Medical Care Insurance by the State Society. Is there any discussion on that?

DR. HARRY ARANOW, Bronx: I feel that before adopting this motion the thing should be thoroughly considered by the House. This will impose a considerable cost upon the Society. There is something peculiar about bureaus, on which we have had experience in many phases of our government, both national and State, in that when a bureau once gets engrafted in a place it is pretty hard to root it out. You are going to start another bureau by this action that is requested to do something which even made the Chairman of the Reference Committee, when making the report, say, "That man will have some job," or words to that effect.

I have had the good fortune of being on committees studying the various types of preventive insurance ever since the study was first made by the Committee on the Costs of Medical Care. I have been on both State and local committees, including that of the Academy. I am also a member of the Trustees of the C.M.C., the Community Medical Care, which is a medical insurance plan. We know that throughout the United States countless counties have tried to get the thing started, and in their zeal have had a tendency to oversell it; however, for some reason or another, there is not one in the whole United States that has made a tremendous success of it. The reason they have not is that there are some very serious drawbacks. The most serious drawback of all is that the people won't buy it. (Laughter)

The Community Medical Care has at its command the sales force of the Associated Hospital Service. The Associated Hospital Service, as you know, has a trained selling personnel, yet we find we cannot sell insurance to people; they are not interested except in large groups where the employer is willing to pay the cost.

The second problem is getting the doctors interested and really cooperating in it. We are all anxious about what this Wagner-Murray-Dingell bill is going to do that is detrimental to the future of medicine, but when it comes right down to the doctors personally there are very few of us who take an active part in doing anything about it. We have been trying to educate the medical profession in this county and all the other counties throughout the country about the importance of doing something; but have they done anything? No, they have not. There is not a more energetic and more serious and hard-working man than Fred Elliott, in Brooklyn. There is hardly a week that goes by when I don't get a letter from him appealing to the medical profession to help, and unless I am mistaken he got very little help from the medical profession.

It is very discouraging, I can understand that; and I can also understand the feeling of helplessness on the part of the Committee, so "Therefore, let us do something. We have got money in the Treasury, let us waste it or spend it, whatever may

be the result. We are going to get a man to do this job. He will have to be a man who understands insurance."

That is all very well and good, and sounds fine, but we will have to pay him a good salary if he is a good man. He will also have to have the medical concept. He will have to understand the practice of medicine, and I know for a fact that unless you practice medicine you don't get that conception. I have been in groups of medical men who practiced medicine higher up and who did not have the right conception of medical practice. So we are going to get that kind of a man, who has the medical conception, and he will have to educate the public and educate the medical profession, which we have tried to do for years and have not succeeded, to buy and sell this type of insurance.

I, personally, feel that such a man does not exist. I, myself, do not know anybody who would fill the bill, and I don't know whether you realize what you are doing when you give that as an order to the Council, as well as to the Board of Trustees, to do something which they may not be able to do. They might not be able to get the man, and if he is going to be a medical man, and you take him out of his practice and put him on a salary, you have got to support him for the rest of his life, because if he gives up his practice, after five years he cannot go back to it. Therefore, that is another matter you have to weigh: If you take a medical man out of his practice for five years, you have to support him for the rest of his life.

I consequently would suggest that this whole matter be left to the Council to decide whether the thing is possible. Let us express our sentiments that we are in favor of organizing such a Bureau, but, personally, I don't think the thing is possible.

VICE-SPEAKER HALE: We are discussing that part of the Planning Committee for Medical Policies' report which recommends the formation of a Bureau of Medical Care Insurance by the State Society, and the reference Committee has approved of that. Is there any further discussion?

DR. BENJAMIN M. BERSTEIN, Kings: Mr. Speaker, ladies and gentlemen, let us pray! Let us pray for the courage to withstand that which we cannot change. Let us pray for the farsightedness to see and the willingness to change that which we can change. Let us pray for the wisdom to know the difference between that which we cannot change and that which we can change.

Are we going to stand by again and see the march of progress pass us by and leave us far behind? Are we going to repeat the mistakes of former years when we first opposed compensation medicine in New York State, and then we took it so close to our hearts that we were loath to give it up. We opposed marriage between the Associated Hospital Service and Medical Expense Insurance, and you heard me read a resolution a little while ago that one of the organizations *sub rosa* proposed by the Associated Hospital Service has merged with Medical Expense Fund to organize a new medical service company.

If we don't take steps today—this is not a threat; I don't have to threaten you, for I threaten myself when I do—if we stand by and don't do anything at all about trying to sell some voluntary form of insurance, we are going to have compulsory health insurance thrust upon us whether we like it or not.

The other night Congressman Celler, in coming home to Brooklyn with me from a meeting in New York, said, "I don't think the Wagner bill is going

to pass this year, but don't forget the pattern we have followed, particularly in the past. Compulsory health insurance has been a success in Britain, and we are going to have it too some day, particularly when things are not as good as they are at the present time."

How are we going to counteract that sort of a trend, unless we try by all the efforts at our command to sell first some voluntary form of health insurance?

Let me tell you a secret. When the Medical Expense Fund in Brooklyn was established, I did not own it. I did not give them a dime because I did not feel that I would be willing to join the plan under which my fee would be a matter of what was left over, where I would have to compete for my own patients and then have what was left. But you heard me say this morning that the United Medical Service has cash in the bank to pay its bills and will make every attempt to pay all bills in full to every man that he gains by trying to purchase insurance for people above a certain income level, and service for those below who cannot afford to pay, those who today are our dispensary patients, those who today don't pay us even when they come to our office but shamefacedly leave a dollar bill behind on the way out.

If we don't establish a bureau for coordination and correlation, we will never have a State plan. In our own backyard.

Well, perhaps a State plan must come with local modifications to suit the local needs of each county and each community, but if we don't cooperate with each other, and don't coordinate our experiences, and don't have a man at our command who can go from hamlet to hamlet and sell this idea throughout the State, then we will not be able to sell it.

and keep him  
k into practice  
good? I don't  
think we will find a man of that kind at all in medicine.

I think we will find such a man now connected or associated with one of the insurance companies. I don't want to mention names, but there are men in the Metropolitan Life Insurance Company, in the Equitable Life Insurance Company, and other companies, who I am sure would possess sufficient knowledge of insurance problems to tackle a job of this kind, so we won't have to decapitate a man from his practice at all and then throw him back into the lap of the gods.

I plead with you let us have this Bureau now.

- want  
to say a word about the cost. We have heard it said that this will cost a lot of money. I think it will. However, I happened to read the Treasurer's report, from which I note that we have a surplus of over \$400,000, and that in spite of all the dire predictions of the previous Treasurer as to the effect of the war we have had an increased surplus balance this year of \$43,477.

This is an organization which lives on its members' dues, and theoretically it collects dues for the benefit of the members. It does not collect dues for any purpose of building up any wealth which might be thought of as a mortmain, and which might even later on be lost because of inflation or some

other measure. If we don't spend our members' money, we have no right to collect it.

Speaking about what money can do, in Westchester County we had a medical society for many years which was very inoperative, and did very little. Some ten or eleven years ago some of our leaders were farsighted enough to see that nothing would ever be done unless it was correlated, coordinated, and centralized in one person's office. They, therefore, at the expense of considerable disapprobation at the time, hired a full time secretary.

I think this body knows what has happened to Westchester County since then. I certainly can assure you that for a very pitayune price and with a very small increase in dues work has been accomplished which was never dreamed of before.

In my opinion, if we are ever going to lick this business of prepaid medical care we are going to have to be willing to dump into the pot some of this hoarded gold which came out of our pockets, and which is being built up for I don't know what reason—perhaps, to pay the dole to us when we no longer can make a living. (Applause)

VICE-SPEAKER HALE Is there any further discussion?

DR. THOMAS M. D'ANGELO, *Queens* Mr. Speaker and Members of the House of Delegates, I have the utmost confidence and respect for Dr. Aranow's judgment. I also have the utmost confidence in and respect for the judgment of the Council and its Board of Trustees. As I understand this resolution, all it asks is that the Council and the Board of Trustees may open such a bureau.

CHORUS No "Shall" is the word. It is mandatory.

DR. D'ANGELO Is that right?

VICE-SPEAKER HALE "Shall" is the word. It is

again?  
VICE-SPEAKER HALE Read it good and loud so all the delegates are able to hear it.

DR. MASTERSON "Your Committee concurs in the recommendation of the Planning Committee for the establishment, as soon as possible, of a Bureau of Medical Care Insurance by the State Medical Society under a full time director with the necessary personnel and whose duties are enumerated in the report. The selection of the director and personnel to operate this Bureau shall be made by the Council, and the Board of Trustees should appropriate the money necessary for the establishment of this Bureau."

DR. D'ANGELO I will still say that I don't see where it is mandatory, as read. All it provides there is that the Council shall, after a decision is arrived at, find the personnel to operate the Bureau and the Board of Trustees shall appropriate the funds, but I don't see where it says in that recommendation that they must open up such a bureau.

VICE-SPEAKER HALE If they can't do it, that is another thing, but if it is possible, they must do it.

DR. D'ANGELO Because it is discretionary, I think it is. This provides for a Board of Trustees.

I cannot find a man to head such a bureau it won't be opened. If during the year such matters should arise as would make such a bureau no longer be feasible, then I know they would not do it. This would leave it to the judgment of the Council and Board of Trustees, and

I would certainly recommend the adoption of this resolution.

VICE-SPEAKER HALE: Is there any further discussion?

DR. ABRAHAM KOPLOWITZ, *Kings*: Mr. Speaker, Ladies and Gentlemen, personally I think that you are going to pass this resolution. I hope so. But I don't want to take a chance, so I want to put two words in it, or more. I also have a lot of respect for Dr. Aranow, but I certainly could not respect his judgment on this question. Dr. Higgons, who reminded us about our reserve monies, has raised a question that a lot of us have been thinking about. What in heaven's name are we keeping that money for? For what earthly purpose except to buy bonds, and when the market falls to lose the money?

Now we are being faced with a situation where the people will demand and are demanding some form of medical expense insurance, either compulsory or voluntary. Unless we are hypocrites, we must do something about it. We keep on saying that it is up to medicine to lead the way, but just as soon as a plan is mentioned that means we are actually to do something, then there will be negative opinions expressed: "We cannot spend the money," "You cannot do it," "It is impossible," and so on.

Well, if you want to admit that you cannot, then stop this whole thing, pass no resolutions, and let things go as they will. I don't think, however, that that is the opinion of a wide-awake physician. If it is, then God help us. You have heard that there is health insurance in other countries. You can shout from the housetops that it is not a success there, but the public feels that it is. We are trying to offer something that we know is better for the public, but, like everything else, we have to sell it; it won't sell itself.

I know that the companies up to date, the Community Medical Care Plan or the Medical Expense Fund, have not made the howling success that we hoped they would; but at least let us make an attempt to help them.

There is one part in this report that I don't entirely agree with, but I don't consider it important enough to make any serious objection to it. I refer to the part where it almost insists upon, but not quite, having a medical man for director of the proposed bureau. Personally, I would not be so highly in favor of a medical man, because a medical man who has not succeeded in making a living so that he will accept such a job, I would be a little afraid of; but we might be successful in getting a medical man.

I want a live wire whose livelihood will depend upon trying to make this a success, who will feel that if he cannot do the job right he will lose his job.

It may cost us \$10,000, \$15,000, \$25,000, or even \$50,000, true; and if we do not succeed, then at least we have tried. Let us try.

DR. ARTHUR S. BROGA, *Madison*: In these days when you pay \$2.50 for a haircut, you can throw in \$100 for a lengthy study to be made on this proposition.

However, give us a good sound medical man to head it. If the miners can raise up a man like John L. Lewis, we ought to be able to raise up a good insurance man, who is also a good doctor, and who can tell us what to do along these insurance lines. I am all in favor of going ahead with this plan instead of waiting until the rest of my hair is gone and then bemoaning, in 1952, that we didn't go ahead and do something before we have things thrust upon

us that we don't want and which will do neither us nor the public any good. Let us go ahead with it, and at least make a try.

DR. MASTERSON: I would like to get something clear on the record first before the presiding officer puts the question. Dr. D'Angelo stated that in his opinion the creation of this bureau was not mandatory but was at the discretion of the Council. Our resolution says that the committee concurs in the recommendation of the Planning Committee for the establishment of a bureau. Is that an order or is it discretionary?

CHORUS: An order.

DR. MASTERSON: That is how I would interpret it. How would you?

VICE-SPEAKER HALE: I think that it is mandatory.

DR. MASTERSON: It is mandatory. That is all I wanted to bring out.

VICE-SPEAKER HALE: Are you ready for the question? You are voting on the recommendation of the Reference Committee approving the Planning Committee for Medical Policies' proposal to set up a Bureau of Medical Care Insurance.

. . . . The question was called for, and the motion was put to a vote, and was carried. . . . (Applause)

VICE-SPEAKER HALE: There is one more action that is necessary. The Reference Committee recommends the continuation of the Planning Committee for Medical Policies on the same basis as last year.

. . . . The motion was made by several, seconded, and as there was no discussion, was put to a vote, and was unanimously carried. . . .

DR. MASTERSON: I now move you the adoption of the report of the Reference Committee as a whole.

. . . . The motion was seconded, and as there was no discussion, it was put to a vote, and was carried. . . .

SPEAKER BAUER: I will declare a three-minute recess so you can stretch.

(There was a three-minute recess at this point.)

SPEAKER BAUER: The House will be in order.

#### Section 51. (See 39, 50)

#### Further Report of Reference Committee on Report of Council—Part VII: Nonprofit Medical Expense Insurance

SPEAKER BAUER: The Chairman recognizes Dr. Gartner, Chairman of the Reference Committee on Report of the Council, Part VII, Nonprofit Medical Expense Insurance. He has a report, which was postponed until the completion of the Planning Committee's report.

DR. A. A. GARTNER, *Erie*: Mr. Speaker, inasmuch as the House has adopted the resolution recommending the appointment of a full-time Director for Medical Expense Insurance, no action is necessary on the recommendation of our Committee which pertains to this matter. I, therefore, move that the report of our Reference Committee be accepted as a whole.

. . . . The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. . . .

SPEAKER BAUER: Thank you, Dr. Gartner!

#### Section 52. (See 7)

#### Report of Reference Committee on Report and Supplementary Report of the Council—Part IV: Public Health Activities

DR. WALTER G. HAYWARD, *Chautauqua*: Your Reference Committee on Report of the Council, Part IV, Public Health Activities, has carefully con-

... report with complete wishes to commend the their diligent work and clear and painstaking reports.

We note with satisfaction that the New York State Council on Social Hygiene has advised the Council of their Sub-committee on Exchange Banks, and that they intend to submit to the 1945 New York State Legislature to the end that legislation may be enacted that will supplement, rather than supplant, existing facilities.

This report is signed by Edwin A. Griffin, Harry I. Johnston, Albert A. Cinelli, Leo P. Larkin, and Walter G. Hayward, Chairman, and I move the adoption of the report as a whole.

**SPEAKER BAUER:** This report pertains to public health activities, and is informative. Chiefly it covers 4-H Clubs and youth health activities, venereal and chest diseases, dental health, war

activities and for their own... The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. ....

# Section 53

## Report of Reference Committee on Report of Board of Trustees

We note that many conditions, such as increased social problems, international money values and the possibility of advancing inflation, the pressing war expenditures, and the many and devious forms of taxation have given the Board of Trustees much con-

asset. The Trustees also state that the financial condition is sound, and this condition is due to:

1. Appreciation in value of the investment fund
2. The financial asset of the JOURNAL this year for the first time.
3. Income from investments.
4. Omission of publishing a Directory, saving the net cost, which was \$22,000; and
5. Last, but not by any means least, the conservative administration of the income of the Society.

We note that the financial condition of the Society would entail an amendment in the State Society Bylaws. The Board of Trustees states also that the financial soundness of the Society is largely due to careful management of the financial affairs of our Society by the Treasurer. This has been accomplished without curtailing the essential activities of the

ing, and because it would relieve the Board of

Trustees from functioning in a field for which they are not especially trained, and also because the decisions of the Board of Trustees would be easier and fewer, the recommendation of the Board of Trustees

nendation.

**SPEAKER BAUER:** You have before you the motion of the Reference Committee which carries with it the approval of the recommendation of the Board of Trustees that the Society's investments be placed in the hands of a trust company. Is there any discussion on it?

**DR. JOHN J. MASTERSON, Kings:** What would that cost us?

**DR. DI NATALE:** Nothing. .... The questi ..... tion was put to a vote, ..... o ex-

**DR. DI NATALE:** ... express its appreciation to the Board of Trustees for their watchfulness over the funds of our Society. May the Board of Trustees always be on the alert to protect the interests of the members of this Society.

I move the adoption of the report of the Reference Committee, consisting of Peter J. Di Natale, Chairman, Charles A. Anderson, Archibald K. Benedict, Alfred H. Noehren, and Ada Chree Reid, as a whole.

.... The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. ....

**SPEAKER BAUER:** There have been a number of inquiries as to Dr. Irving. I know you have missed him here today. I wish to inform you that Dr. Irving is under the weather. It is very painful, but ... Any ... is in Room 1510-A.

# Section 54. (See 20)

## Report of Reference Committee on New Business A—Special Membership for Interns and Residents

**DR. JOHN D. CARROLL, Rensselaer:** The following resolution was presented by Dr. LeWin, of Erie County:

"WHEREAS, it would be in the interests of the younger men to join the State Society; therefore be it

"Resolved, that interns and residents in hospitals be permitted to join the organization at a reduced fee."

be ... Society would entail an amendment in the State Society Bylaws.

We recommend the disapproval of this resolution, and I so move.

.... The motion was seconded. .... **SPEAKER BAUER:** It has been moved that the resolution be disapproved and that the county societies take action to give such men local privileges. Is there any discussion on the motion, which carries with it the disapproval of the resolution?

**DR. JOHN J. MASTERSON, Kings:** For the information of the delegates, we have intern and student members in Kings County, and have had them for many, many years.

**SPEAKER BAUER:** We have the same thing in Nassau County.

DR. JACOB WERNE, *Queens*: And the same thing is true in Queens.

.... The question was called for, and the motion was put to a vote, and was carried. ....

SPEAKER BAUER: The resolution is, therefore, lost.

#### Section 55. (See 24)

#### Report of Reference Committee on New Business A—Establishment of Committee on Health Education in Each County Society

DR. JOHN D. CARROLL, *Rensselaer*: The following resolution was introduced by Dr. B. M. Bernstein, of Kings County, concerning the establishment of a Committee on Health Education in each county society:

"WHEREAS, the education of the public in health matters is of the utmost concern to the organized medical profession; and

"WHEREAS, the means and methods to be pursued in carrying on the education of the public ought to be and remain in the control of the county and state societies; therefore be it

"Resolved, that the Medical Society of the State of New York urge each county society to establish a Committee on Health Education either as a separate committee or as a subcommittee of the Committee on Public Health, in order to effectively carry on this very important adjunct of medical practice."

Your Committee approves the above resolution, and I move for its adoption.

.... The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. ....

#### Section 56. (See 32)

#### Report of Reference Committee on New Business A—Approving Action of American Medical Association on Noninclusion of Medical Service in Hospital Insurance Plans

DR. JOHN D. CARROLL, *Rensselaer*: The following resolution was presented by Dr. Stephen H. Curtis, for the Section on Pathology:

"WHEREAS, the Council of the Medical Society of the State of New York has affirmed the position of the American Medical Association in opposing the inclusion of pathology, radiology, anesthesia, physical therapy, or any other form of the practice of medicine in a voluntary hospital or Blue Cross plan; and

"WHEREAS, it is opposed to hospitals accepting contracts of this kind and proposes that these insurance contracts for medical services be cared for by the voluntary nonprofit medical care plan; be it

"Resolved, that this House of Delegates go on record as approving this action by the American Medical Association."

Your Committee approves this resolution, and I propose its adoption.

.... The motion was seconded. ....

SPEAKER BAUER: Gentlemen, you have just voted on the same thing in the Planning Committee's report, which covered almost the same language. Unless there is objection, I will rule it is not necessary to take any further action. The resolution has really been approved in substance in the Planning Committee's report.

.... There was no dissent expressed. ....

#### Section 57. (See 28)

#### Report of Reference Committee on New Business A—Proposed Amendment of Bylaws of the American Medical Association Relative to the Powers of the Board of Trustees

DR. JOHN D. CARROLL, *Rensselaer*: This resolution was submitted by Dr. C. James F. Parsons, of the Westchester County Medical Society, and concerns "Proposed Amendment of Bylaws of the A.M.A. Relative to the Powers of the Board of Trustees":

"WHEREAS, it was clearly the intent of the framers of the Constitution and Bylaws of the American Medical Association that the House of Delegates shall be the supreme authority for the determination of the Association's policies; and "WHEREAS, Section 1 of Chapter VI of the Bylaws of the American Medical Association provides in part as follows: 'All resolutions or recommendations of the House of Delegates pertaining to the expenditure of money must be approved by the Board of Trustees before the same shall become effective;' and

"WHEREAS, this blanket authority conferred upon the Board of Trustees of the American Medical Association may be, and has been used as, a veto power on the part of the Board of Trustees upon resolutions adopted by the House of Delegates expressing the clear will and mandate of the House; and

"WHEREAS, it is clearly not in the best interests of the profession nor in harmony with democratic procedure for the Board of Trustees, existing only as an agent of the House of Delegates, to have the power and authority to countermand the declared purposes of the House of Delegates through the withholding of necessary funds for the accomplishment of such purposes; therefore, be it

"Resolved, that the delegates of the Medical Society of the State of New York to the House of Delegates of the American Medical Association, be instructed to propose an amendment to the Bylaws of the American Medical Association at the 1944 next meeting of the House of Delegates of the American Medical Association, providing that the sentence in Section 1 of Chapter VI of the Bylaws of the A.M.A. reading 'All resolutions or recommendations of the House of Delegates pertaining to the expenditure of money must be approved by the Board of Trustees before the same shall become effective' shall be deleted and that the following sentences shall be substituted for the deleted sentence: 'It shall be the duty of the Board of Trustees to make effective in the shortest possible time the expressed purposes and mandates of the House of Delegates as embodied in its resolutions and formal recommendations. In case the Board of Trustees shall object to such a mandate, it shall report its reasons to the House of Delegates at the earliest opportunity. The action of the Board of Trustees may then be overridden by a vote of two-thirds of the Delegates present and voting.'"

Your Committee feels that this resolution would seriously impede the satisfactory budgetary duties of the Board of Trustees of the American Medical Association, which has functioned throughout the years with no specific instances of frictional appropriation of funds in relation to the organization as a whole; therefore, I recommend the disapproval of this resolution, and so move.

.... The motion was seconded. ....



**SPEAKER BAUER:** You have before you the report of the Reference Committee, which recommends disapproval of the resolution. If you vote "Aye," you disapprove of the resolution, if you vote "No," you approve of it. Is there any discussion on the motion?

**DR. C. JAMES F. PARSONS, Westchester:** I feel it would be wrong if the purpose of this resolution and the one that preceded it earlier, which you threw out with such a thump, were not explained.

Very briefly, I will give you a summary of the discussion that led up to this resolution. We have to face facts, and not misinterpret the purpose of it. In any meeting I have ever attended in a local society, or in this gathering, for that matter, where the board of trustees or its equivalent in the county society came under criticism, it was always interpreted on a personal basis rather than what this is a criticism of the political structure. Any person acquainted with the workings of the American Medical Association who criticizes the Board of Trustees on a personal basis is wasting his time because, as anybody knows, over a period of ten years there has been a 70 per cent turnover in the personnel, so, as I stated before, we can dismiss that without any further comment.

Why did the interest in the governmental structure of the American Medical Association in this connection come up? Let us judge it on the basis of facts which are uncontested. You know that in the last few years there has been a great departure from the American Medical Association, from the solidity and the cohesiveness of the American Medical Association, as illustrated by the California group, the Far-Western States group, the Lake County, Indiana, group. From the talk in the stockrooms in your county societies the objection is to the American Medical Association's political structure, and not to its personnel—I emphasize that again—and rather extravagant suggestions have been made as to how to correct them. Let me put this question, and in doing so I am reminded that I am summarizing the discussion that led up to these resolutions. If the American Medical Association were functioning as our parent body satisfactorily, would the splittings from the national organization take place? I think they would not.

We discussed for a long time whether it would be opportune, or a good time, or even good judgment to bring in those two resolutions. Finally we decided we would because there would be a purpose served by it.

the duties of the organization as they should have done, or at least so it is felt in some quarters. Therefore, it is up to all the component units, in the interest of unity, to study the problem of why the American Medical Association apparently has not fulfilled that which we wanted it to do.

We need only to refer to the fact that unity is strength. We need only to reiterate that at this time we need unity and strength in our organization more than at any time in the long history of the American Medical Association since it started in 1847. It has evolved and done a marvelous job, but times have changed, and we are faced with the problem—and this is not the first time it has come up, I learned in the Reference Committee today that the same subject was introduced, I believe, last year, and I can assure you that the subject involved in this resolution will come up again, not

necessarily from this source, but it will come up again, and we have to face the fact—that the American Medical Association is apparently not doing the national job as a great many of those 116,000 members of the American Medical Association would like it to do. So does it not seem reasonable that all the component organizations should study first of all why the American Medical Association has fallen down, if you grant it has?

These two resolutions that I introduced this morning were by way of emphasizing that the political structure of the American Medical Association needs the most profound study.

I may digress for a minute to give a personal opinion, and that is that I believe it is the duty of all of our publications, state and county bulletins, to keep before the membership a constant picture of the political structure of the American Medical Association and its performance, so that they will understand it fully and have the means wherewith to improve and correct what is wrong.

If you were to ask me what I consider—and what I consider personally is unimportant unless it stands on its own legs—the greatest weakness of the American Medical Association, I would say that the individual member has no sense of participation. After the House passes a resolution, it is put up to the Board of Trustees, who act strictly within their constitutional privilege, and you will admit that you will hear unofficially from many sources that their power of veto has been exercised again. This is not a criticism of the personnel, because they are chosen in the established way. They are men of integrity, and, furthermore, I want to emphasize that the turnover is 70 per cent, or has been in the period of about

has fallen down, and it is our duty to study the question and the matter of checks, and balances to bolster it up. If the Board of Trustees take upon themselves this absolute power of vetoing your mandates, it is only reasonable to consider the possibility of the Board of Trustees' sometimes being in error, though they intended well. Therefore, a system of checks and balances should be instituted so that it can be referred back again to the House, and so that the House, representing your 116,000 members, can have some power. That seems only reasonable. These are the points that were behind these resolutions.

**SPEAKER BAUER:** Is there any further discussion?

The question was called for, and the motion was put to a vote, and was carried.

**SPEAKER BAUER:** The recommendation of the Reference Committee is carried, and the resolutions are lost.

#### Section 58 (See 9)

#### Report of Reference Committee on the Report and Supplementary Report of the Council—Part X Medical Licensure

**DR. MAURICE J. DATTELBAUM, Kings:** Medical licensure statistics recently completed for the year 1943 for the State of New York are not encouraging.

than the graduates of approved schools in this country.

The two recommendations proposed to the House of Delegates of the Medical Society of the State of

New York, at Buffalo, in 1943—namely, to refuse in the future to admit to examination for licensure any graduate of a foreign medical school 25 or more per cent of whose graduates taking examinations during the past ten years have failed to pass, and also the recommendation to limit definitely to three in all the number of examinations that may be taken by any candidate for licensure to practice medicine—have not met the favor of the Board of Regents. This decision is, of course, a great disappointment to the Council and the Committee on Medical Licensure.

The Citizenship Bill was not introduced this year because the Legislature would not entertain any controversial issue. It will be introduced at the next session of the Legislature in January, 1945.

The work of the Committee on Medical Licensure, we feel, should be approved in all its details and their suggestions should be heartily supported.

I move that the report of the Reference Committee, consisting of Maurice J. Dattelbaum, Chairman, Fenwick Beekman, Edgar O. Boggs, Walter T. Heldmann, and William A. Peart, be approved.

... The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. ....

#### Section 59. (See 10-11)

#### Report of Reference Committee on the Report and Supplementary Report of the Council—Part XII: War Participation and General Matters

DR. DAN MELLEN, *Oneida*: There has been much work carried on, mostly by the Business Manager's Office, relative to obtaining physicians for induction throughout the State. There have been 10,000 physicians who have gone into the service from New York State. In the future they will be from the more recent graduates. It is suggested that the county societies make plans for re-establishing discharged physicians in their former practices, and to give physicians who have not previously been in practice necessary postgraduate work, and placing them in areas where they are most needed. The latter will call for the cooperation of the State Medical Society and the American Medical Association's Planning Committee.

It is recommended that the War Participation Committee be designated as the coordinating agency in this program.

An effort was made to find out how many alien physicians would be willing to return to their former homes in connection with the repatriation program. No accurate list of these men is available. We understand there are 3,650 of these men licensed in the State of New York and probably an equal number unlicensed. We suggest that the Committee continue their work by questionnaire and information from the Educational Department.

The Committee approves the nominations of the Council to the Committee on Grievances of the State Department of Education and to the Nurses Advisory Council of the Department of Education; also the nominations of the directors of the Physicians' Home—all as published on page 773 of the Report of the Council.

Concerning the Committee on Office Administration and Policies, this special committee has continued with the same personnel. The main work of this committee has concerned clerical salary adjustments.

We are familiar with problems facing the

Committee on personnel policies, and are confident they are using their best judgment in meeting them.

*Effects of Redistricting.*—As a result of these studies the Council went on record to the effect that it is of the opinion, based on legal interpretation, that the 1944 House of Delegates will assemble on the old basis of representation.

*Selection of Additional Delegate to the 1944 House of Delegates of the American Medical Association: Dr. William Hale.*—Dr. William Hale, who was highest in vote of the alternates, becomes the tenth delegate. This is provided for in Chapter 4, Section 6, of the Bylaws.

The Council has received and placed on file the following letter from Dr. Mabel E. Gardner, of the American Medical Women's Association, Inc.:

Dr. Peter Irving

Medical Society of the State of New York

Dear Sir:

At the Board Meeting of the American Medical Women's Association held in Chicago, June 5-6, 1943, great satisfaction was expressed that commissions and equal recognition of women in the armed forces has finally become an accomplished fact, thus removing the obstacle in the way of women physicians performing the highest patriotic service in their power in this crisis.

This Association, by unanimous vote, authorized me, as the secretary at that time, to express to you our appreciation for the unanimous support given by the House of Delegates of the Medical Society of the State of New York, not once but several times, and for the great privilege of being allowed to present our case in a series of letters published in the *State Journal*.

It gives me pleasure to thank you, in behalf of the Association, for this support of our cause.

Yours sincerely,

MABEL E. GARDNER, M.D.

The Council recommends payment of the following bills which were not turned in until after the expiration of the statutory thirty days and possible extension for ninety days more: bill from Dr. J. G. Fred Hiss, in his capacity as a member of a Subcommittee of the Council Committee on Public Health and Education, as a member of the Committee on Convention for the 1943 Annual Meeting, as a lecturer in the Postgraduate Courses and at the Annual Secretaries' Conference, bills for travel expenses and miscellaneous covering the period from July, 1942, through the Annual Meeting in May, 1943, totaling \$198.50; bill from Dr. Emily D. Baringer covering railroad fare to Atlantic City to attend the American Medical Association House of Delegates as a New York State Delegate, June, 1942, in the amount of \$9.00.

The Reference Committee approves action of the Council in remitting dues and State assessments of men in service, and also approves the action of the Council in recommending that county societies collaborate with nursing representatives of the Procurement and Assignment Committee of the New York State War Council for Nurses.

The Reference Committee approves the recommendation of the Special Committee of Office Administration and Policies that they be continued and that the personnel consist of the General Manager, the business manager of the *JOURNAL* and *Directory*, the Literary Editor, the Treasurer, and one member of the Board of Trustees, to be appointed by the President of the Society after consultation with the Chairman of the Board of Trustees.

I move the adoption of the Reference Committee's report, which is signed by Jacob Werne,

Burdge P MacLean, Stephen A Curtis, William C Meagher, and Dan Mellen, *Chairman*

**SILAS BAUER** Before we take up the adoption of the report as a whole there are three recommendations which we will take action on individually.

The first was the recommendation that the War Participation Committee be designated as the coordinating agency in returning physicians discharged from the armed forces back into practice. Is there any objection to the adoption of that recommendation?

There was none expressed  
**SPEAKER BAUER** Hearing no objection, it is carried

The second is one approving the belated bills which were submitted. As you know, bills are supposed to be submitted in thirty days, the Trustees can extend the time ninety additional days, beyond that only the House of Delegates can approve these bills. These bills have been submitted to the Reference Committee and itemized. Is there any objection to approving these belated bills for payment?

There was none expressed  
**SPEAKER BAUER** Hearing no objection, they are

was to continue the  
ation as outlined by  
the C Committee Is  
there a

**SPEAKER BAUER** If not, then all those in favor of the adoption of the report as a whole will say "Aye", those opposed, "No". The "Ayes" have it, and the report is adopted.  
Thank you, Dr. Mellen!

**Section 60 (See 13, 76)**

**Reference Committee on Constitution and Bylaws Amendments**

**DR. FREDERIC W. HOLCOMB, Ulster** In regard to the Proposed Amendment to the Bylaws, Chapter II Section 1, which is as follows:

"WHEREAS, the recently enacted reapportionment bill is based upon the population ratio and will thereby cause the House of Delegates of the State of New York

"Resolved, that the number of delegates from any component medical society be not reduced from their present number unless there has been a material reduction of the number of physicians in the area of any county medical society,"

your Reference Committee disapproves this proposed amendment for the following reason: the wording of this amendment is indefinite as to this portion "unless there has been a material reduction of the number of physicians in the area of any County Medical Society." No definition of the word "material" is given.

I move the adoption of this portion of the Report.  
The motion was seconded.

**SPEAKER BAUER** You have before you the recommendation of the Reference Committee that the proposed amendment be disapproved. Is there any discussion?

**DR. ALFRED M. HELLMAN, New York** There is such a small group present now to consider such an important matter that I should like to move that

we table or rather postpone action on this until tomorrow morning.

**SPEAKER BAUER** It has been moved that consideration of amendments to the constitution—I take it?—

**DR. HELLMAN** Yes.

**SPEAKER BAUER (continuing)** And not just this one?

Be postponed until  
a larger group

The motion was seconded, and as the Chairman was in doubt as to the result of a *via voce* vote, there was a standing vote, and the motion was declared carried by a vote of 52 in favor and 24 against.

**SPEAKER BAUER** You will have to come back, Dr. Holcomb, tomorrow.

**VOICES** Move we adjourn.

**SPEAKER BAUER** The chairman will receive resolutions.

**Section 61 (See 77)**

**Group Plan of Malpractice Insurance**

**DR. T. WILLIAMS, Bronx** This is a resolution which we are instructed to bring in from Bronx County.

"WHEREAS, there is an Insurance Committee of the Medical Society of the State of New York, and

"WHEREAS, one of the functions of this Committee is to supervise the Group Plan of Malpractice Insurance in order to provide for the membership protection in a reliable and sound manner, and  
as he has failed to  
as he evaded its re-  
of its function to  
and  
company other than

"WHEREAS, this condition has disrupted the

"Resolved, that the Bronx County Medical Society instructs its delegates to the State Society Convention to bring this matter before the House of Delegates at its 1944 meeting, and be it further

"Resolved that the present leading competitor

in  
her  
of  
pa

"Resolved, that the Insurance Committee of the State Society be directed to meet with other active competitors in malpractice insurance and submit regular reports on these meetings, and be it further

"Resolved, that copies of these resolutions be sent to the county medical societies throughout the State immediately."

**SPEAKER BAUER** That resolution is referred to the Reference Committee on Report of the Council, Part XI, of which Dr. Krakow is Chairman, since it

is very closely allied to the Report of the Council Committee on Malpractice Defense and Insurance.

*Section 62. (See 79)*

**Minimum Medical Fee Schedule of Workmen's Compensation Law**

DR. ABRAHAM KOPLOWITZ, *Kings*: I have two short resolutions, the first of which is:

"WHEREAS, the minimum medical fee schedule of the Workmen's Compensation Law was established by the Industrial Commissioner of the State of New York during normal times; and

"WHEREAS, on and after May 15, 1942, the hospitals in the State of New York were granted an increase in fees by the Industrial Commissioner following a conference and agreement by the representatives of the Compensation Insurance Carriers and the Hospital Association of New York State; and

"WHEREAS, the cost of living has increased within the past few years; therefore, be it

*Resolved*, that the Medical Society of the State of New York take such appropriate action as is necessary with the Industrial Commissioner of the State of New York and the representatives of the Compensation Insurance Carriers that an increase be granted to the medical profession for fees in the present 'Minimum Medical Fee Schedule.'"

Originally there was a percentage mentioned, but it was felt that perhaps that should be left open.

SPEAKER BAUER: That resolution is referred to the Reference Committee on New Business A, of which Dr. Carroll is the Chairman.

*Section 63. (See 83)*

**Workmen's Compensation—Deduction from Bills**

DR. ABRAHAM KOPLOWITZ, *Kings*: This is the second resolution I wish to introduce:

"WHEREAS, the practice of deducting 5 per cent from compensation bills which are paid within thirty days violates all business principles; and

"WHEREAS, the payment of bills is a purely business procedure; and

"WHEREAS, the usual business practice is the deduction of 2 per cent for the payment of bills within a stipulated reasonable period of time; therefore be it

*Resolved*, that the Medical Society of the State of New York be requested to arrange with the Industrial Commissioner of the State of New York that no deduction be made in the payment of bills for workmen's compensation cases."

SPEAKER BAUER: That is referred to the Reference Committee on New Business B, of which Dr. Eggston is the Chairman.

*Section 64. (See 40, 87)*

**Maternity and Infant Care Program**

DR. CHARLES GULLO, *Livingston*: I wish to present the following resolution having to do with the E.M.I.C. Program:

"WHEREAS, the present Federal Emergency Maternity and Infant Care Program of the Children's Bureau is intolerable, as it violates the physician-and-patient relationship; therefore be it

*Resolved*, that the Medical Society of the State of New York recommend to the American Medical Association through its Delegates at the next meeting of the American Medical Association that

it request the government or the Children's Bureau at Washington to alter the provision of the law or rule governing fees for maternity and infant care to provide that such money be paid directly to the patient as a medical allotment."

SPEAKER BAUER: I believe a similar resolution was acted on in a Reference Committee report.

CHORUS: It was postponed.

SPEAKER BAUER: That is right. It was Dr. Donovan's committee. We will refer this resolution to that Reference Committee, of which Dr. Donovan is Chairman—Part II of the Report of the Council—so a report can be brought in on this at the same time.

*Section 65. (See 80)*

**Basic Science Law**

DR. H. G. KNICKERBOCKER, *Ontario*: This concerns the Basic Science Law:

"WHEREAS, experience has shown that existing laws in New York State have proved ineffective in preventing the growth of the illegal practice of medicine; and

"WHEREAS, it is in the interest of the public health that steps be taken now, directed towards the eventual elimination of illegal practitioners of the healing art, through the enactment of laws which would effectively raise the degree of education of such practitioners to such a level that they might justly become legal practitioners; be it

*Resolved*, that the House of Delegates of the Medical Society of the State of New York instruct its Legislative Committee that it use its influence to have introduced a bill, at the next session of the Legislature of the State of New York, providing for the enactment of legislation so as to provide in the Education Law of the State of New York adequate guards against and prevention of growth of said illegal practice, and that such proposed legislation be known and designated as the Basic Science Law, which shall provide as a prerequisite for license to practice any of the healing arts satisfactory study and examination in the basic sciences—namely, anatomy, physiology, physiologic chemistry, bacteriology, pathology, and hygiene."

SPEAKER BAUER: That is referred to the Reference Committee on New Business A, of which Dr. Carroll is the Chairman.

*Section 66. (See 84)*

**Publicity**

DR. H. J. KNICKERBOCKER, *Ontario*: This resolution concerns the subject of "Publicity":

"WHEREAS, the practice of medicine is now and in the future is likely to, in a greater degree, become a political football, to the detriment of the profession as a whole; and

"WHEREAS, no coordinated, uniform policy involving active participation of the county societies, to the limit of their abilities to reach the public, within their individual areas, has been developed; and

"WHEREAS, the individual voter is the final deciding factor and should be able to cast his vote with a reasonable degree of intelligence based on all information available; therefore be it

*Resolved*, that a program aimed at reaching the public individually, in so far as possible, be instituted; and furthermore be it

*Resolved*, that all publicity, literature and

otherwise, originate with the State Society, be approved from the legal standpoint by the Legal Counsel and the Council before being sent to the constituent county societies for distribution and/or publication; and be it still further

"Resolved, that the responsibility for effective publication and/or distribution within its jurisdiction or the same shall be the duty and responsibility of each county society; and be it still further

"Resolved, that all expense incident to obtaining effective publicity of such programs as shall be initiated be paid the State Society; and be it still further

"Resolved, that the Council shall make such rules and regulations relative to the part county societies shall play in the accomplishment of the program."

SPEAKER BAUER: That is referred to the Reference Committee on New Business C, of which Dr. Kenney is the Chairman.

#### Section 67. (See 89)

#### A Plan for Medical Care

DR. SCOTT LORD SMITH, Dutchess: This resolution is presented in accordance with instructions from the Dutchess County Medical Society to its

voluntary insurance will be particularly difficult to carry out. We, therefore, introduce the resolution as we were directed, as follows:

"WHEREAS, the Medical Society of the County of Dutchess has approved in principle a plan to provide adequate medical care to that part of our population just above the line of indigency; and

"WHEREAS, the providing of medical care to this group is one of the vital problems of our day; and

"WHEREAS, the outline of this plan is attached to this resolution; be it

of Delegates refer to an appropriate

The outline of the plan referred to as being attached to the resolution is as follows:

#### "THE CALL

all far-sighted individuals strive.

"From the beginnings of recorded time each member of the medical profession has dealt with the health of a person or a community as an individual. Even when illness has been coupled with financial irresponsibility he has been able to do this to the general satisfaction of all, in accordance with the medical knowledge and the social consciousness of his period; but the time is now at hand, or very soon will be, when the doctor as an individual can no longer meet either standard. On the one hand, medical knowledge has become too vast for him to

"Will we surrender our position of leadership or will we collectively, as an organized group, fully aware of our responsibility for service and our capacity to give it, continue to provide this county with an ever improving grade of medical care?"

"The task of formulating such a plan has been delegated to us. It is with full awareness of the enormity of the problem, and humble appreciation of the frailties of found belief that only medical profession can medical service, that the following outline is submitted.

"Foreword.—Medical care is provided to the American people in four groups:

A. To those whose financial resources are always adequate to pay for such care.

B. Those who budget with voluntary hospital and indemnity insurance.

C. Those who cannot or will not provide insurance and therefore default on or are crushed by the financial load of illness.

"Category B is now very small but susceptible to enormous increase through education and favorable legislation. It is the rational, independent American way of making provision. All increases in category B will correspondingly decrease category C.

"D. Those who are wards of various welfare agencies, public or private.

"The first, second, and fourth groups are now taken care of by the high standards of American medical care. Group 3 provides the problem—i.e., to furnish high standard medical care to that part of our people above the level of indigency and below that of financial independence, without impoverishing the taxpayer. As in the first, second, and fourth groups the doctor sets the standard for medical care, so in the complex administration of the third group, trained and experienced medical men must be in control at the key points, if we are to obtain the desired result. Such points are the guiding body at the top of the plan and those giving actual medical care in the field. Between these two groups a trained business administration is imperative. To give the guiding and the professional care groups adequate authority is the problem which we believe best solved by this plan.

"Preamble.—A plan to afford adequate, high-standard, medical care in hospitals, at home, and in doctors' offices, to can people above the not or do not provide

it out.

1. It shall elect a chairman and one or more vice-chairmen from among its members.

2. Adopt rules and regulations for governing its debates.

3. Appoint appropriate committees and divide its work among them.

4. Arrange regional meetings as the need appears.

"The delegate from each state shall be a graduate in medicine and licensed to practice medicine in his state and be in good standing in his state medical society. He must be duly elected at a meeting of the House of Delegates of the medical society of the state he represents. Unless otherwise determined, his salary shall be a basic \$10,000 a year and expenses approved by the House of Delegates, and a sliding scale increase based on the population of the state in which he serves, and to be determined by the governing assembly. He shall serve a term of six years and be eligible for re-election except that at the election for the first Assembly one-third of the states (territories and the District of Columbia) determined by lot shall elect for two years, one-third for four years, and one-third for six years. These vacancies shall be filled at the end of their respective terms. Each delegate, in addition to his duties in the Assembly and on its committees, shall serve as an executive officer of his own state, reporting to the House of Delegates of his medical society. States of over 500,000 population may elect, in the same manner, deputies for each additional major fraction of a million population, each deputy to serve under the direction of his chief, in arbitrarily designated districts and possess all of his chief's duties and responsibilities except that of attending meetings of the Governing Assembly. His term of office shall be six years, and his salary a basic \$7,500 per year and expenses duly approved by the State House of Delegates.

"The House of Delegates may revoke the appointment of its representatives or his deputy on proof of unfitness to hold the office, and shall make interval appointments to fill the vacancies. The interim governing body of the state medical society may act for the House of Delegates when necessary between the meetings of that body. Any action so taken shall be subject to ratification at the next meeting of the House of Delegates.

"B. The Surgeon General of the Public Health Service or a deputy of his assigned to the position shall serve as a national executive officer of the Governing Assembly and make available to the Assembly the Public Health Services throughout the United States and its possessions.

"C. Such accounting and disbursing departments as may be necessary for the keeping of records and payment of monies for the Governing Assembly to the various states and counties.

"D. An organization in each county or district or combination of such paralleling the medical society organization, to determine in the case of each applicant:

1. His eligibility for such service.
2. The character and extent of the services necessary.
3. The county or district may elect either one of two methods:

(a) The county medical society may assume the responsibility and elect a committee of at least three of its members who shall meet once a month and review the bills submitted by doctors and hospitals for medical care and revise such bills as are not in accordance with the regulations.

(b) When no such action is taken by the Medical Society of a county the County Health Department or State Health Department District Office may review and revise such bills once a month.

"The decision of either the committee or the Health Department shall be final unless appealed to the State Executive Officer and reversed by him.

"Any doctor licensed to practice in the county who cares to work under the regulations set up by this act, and any hospital so agreeing shall be eligible to payment for services rendered to clients included in the third group of medical care as described above at the same rates and under the same regulations and for the same hospital accommodations allowed for Workmen's Compensation cases in the county in question.

"Obstetrical Cases.—(Details to be determined.)

"Tonsillectomies and Other Conditions Not Provided for Under Workmen's Compensation Rules.—(Details to be determined.)

"Doctors or hospitals working under this plan shall abide by the established fee schedule.

"When the county medical society administers the plan each doctor serving on its committee shall be paid by the county a fee of \$10 for each meeting fully attended by him.

"In cities and counties of over 100,000 population the county medical society may set up additional committees to review doctors' and hospital bills, dividing the districts as may be most convenient and electing to the committees doctors practicing therein.

"Financing.—The funds for financing this plan shall be allocated from those accruing to Social Security as provided by Congress. They shall be distributed to each county on the basis of estimated need and supplemented as further needs arise. They shall be in the charge of the County Governing Body (Board of Supervisors, etc.) and disbursed by the County Treasurer according to the regulations, to doctors and hospitals presenting bills for services rendered to clients who are certified by either of the plans set forth above.

"Recommended supplemental legislation referred to in the Foreword as designed to increase the membership of category B—i.e., those carrying voluntary health insurance—and correspondingly shrink category C:

1. Amendment to the national and state income tax laws to make all payments for medical, indemnity, or hospitalization insurance deductible in the full amount carried by the insured, whether such insurance be carried in a nonprofit association or a commercial insurance company.

2. Amendment of the National Security Act to permit the remission of one-half the Social Security payments each year up to the amount of premium paid for the year by a person insured for medical, indemnity, or hospitalization, whether such insurance be carried in a nonprofit association or a commercial insurance company."

SPEAKER BAUER: That is referred to the Reference Committee on New Business B, of which Dr. Eggston is the Chairman.

Are there any further resolutions?

Section 68. (See 85)

Change in Workmen's Compensation Law

DR. THOMAS M. D'ANGELO, Queens: I wish to introduce the following resolution:

"WHEREAS, at the recent session of the Legislature of this State, the Workmen's Compensation Act was amended in such a manner as to divide

the State of New York in this matter into two distinct portions, (1) the counties of New York, Kings, Bronx and Queens, and (2) the remainder of the State; and

"WHEREAS, this change removes from the four metropolitan counties the power to rate physicians for compensation practice, approve and license compensation clinics, arbitrate disputed medical bills, and investigate and try physicians for certain violations of the compensation law; be it, therefore,

"Resolved, that the Medical Society of the State of New York petition the next Legislature, and have legislation introduced to return to the

four county medical societies those powers that were abrogated by the recent change in the Compensation Law."

SPEAKER BAUER: That is referred to the Reference Committee on New Business C, of which Dr. Kenney is the Chairman.

Are there any further resolutions?

(There was no response.)

SPEAKER BAUER: We will recess until 9:00 o'clock tomorrow morning. Please be prompt because we still have a terrific amount of work to be done, and some of the issues still to come up are somewhat controversial, so they will take time.

.... The session recessed at 6:45 p.m. ....

## Morning Session

Tuesday, May 9, 1941

A.M.

... will be in order.

... present?

M. ... ASSISTANT SECRETARY POBYN: Yes, obviously. Sixty constitutes a quorum, and many more than sixty are present.

### Section 69

#### Report of Reference Committee on Report of the Council—Part VI: Public Relations and Economics

DR. DAVID W. BEARD, *Scholarie*: The work of this Committee, consisting of Herbert H. Bauckus, M.D., Buffalo, Harry Aranow, M.D., Bronx, and Charles M. Allaben, M.D., Binghamton, has been enormous and has involved a great number of meetings and consultations. The nature of their endeavors has been both coordinating and assisting other groups. They were, however, not in a position to make specific recommendations, but summarized and elucidated the results of their deliberations. In view of the fact that so many economic problems that confront the Medical Society of the State of New York have been delegated for study by special and standing committees, such as nonprofit medical expense insurance, workmen's compensation, public health and education, and many others, we feel it would be only a duplication of effort for us to comment on all of these various subjects.

The report calls attention to the importance of advising the people of the standards and aims of the practitioners of medicine, that we are fighting a world war abroad, and at the same time training another group to carry on, as well as caring for the people left at home and keeping them in the best physical condition in our history.

The report further calls attention to the activities of the new Planning ... which was authorized the House of Delegates

study of the report on the ... The committee met on several occasions with the Public Health and Education Committee in accordance with the wishes of the Chairman of that Committee, Dr. O. W. H. Mitchell. It studied closely the Emergency Maternity and Infant Care Program of the Federal government and the New York State Department of Health.

The report calls attention to the importance of the Workmen's Compensation Bureau, the Council

contact with the New York State Council for War Service, and has continued as a member of the Atlantic Seaboard Agricultural Workers' Health

time was spent by the ... newer developments for ... including the Beveridge Plan of England and the provisional Health Insurance Act of Canada and the developments in Wagner-

under the ... lph T. B. Todd, M.D., Tarrytown, Carleton E. Wertz, M.D., Buffalo, and Charles F. Rourke, Schenectady. This report calls attention to the fact that owing to the ... many of the problems ... been relieved. However, ... lose touch with the Department of ... this period and discussed the question of payment of medical fees for services rendered old assistance clients. Some of the restrictions formerly placed on participating practitioners in the care of welfare patients have been removed. The Committee was advised that the removal of these restrictions was made possible

the great need of committees on economics of the state and county societies to study carefully constitutions, bylaws, and contracts of all insurance plans submitted to them by insurance carriers, unions, or employer groups.

Your Reference Committee feels that the activities of the Committee on Public Health and Economics have been well carried out, and highly endorses and commends the accomplishments of the past year. It is the hope of the Reference Committee that the work of this Committee will be continued with the same high standards as in the past.

I move the adoption of this report, which is signed

by D. W. Beard, *Chairman*, G. S. Philbrick, Maurice C. O'Shea, Bernard S. Strait, and William Klein.

**SPEAKER BAUER:** You have before you the recommendation of the Reference Committee for the adoption of their report. It presents no controversial issues, discusses the work of the Council Committee during the past year, and recommends its continuation along the same lines.

.... The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried .....

#### Section 70

#### Report of Reference Committee on Report of Secretary, Treasurer, Censors, and District Branches

**Report of the Secretary.** DR. EDWARD P. FLOOD, *Bronx:* Your Reference Committee has only commendation to offer for the work done by the Secretary as evidenced in his report.

We note with satisfaction that the total membership has increased and that relatively few members have been dropped for nonpayment of dues. We wish to congratulate the twenty-four honor counties for having maintained their dues-paying membership 100 per cent.

In the conduct of the New York Office, we note with approval the employment of three additional members of the *JOURNAL* staff and agree that having our own advertising salesmen will eventually prove more satisfactory than the previous arrangement with the late Kent Lighty.

We note with pride the work of the War Participation Committee in cooperating with the Selective Service system. Recognition is taken of the added obligations of the Secretary's office, consequent upon the appointment of new committees and subcommittees without the addition of new employees. We accept the Secretary's recommendation that the legislative chairmen and the county secretaries have their fall meeting on the same day, in the same place. We are pleased that our Secretary enjoys the confidence of Governor Devey and has thus merited appointment on the Commission to Investigate the Department of Mental Hygiene in the State of New York.

We note with regret the passing of Miss Lily B. Baldwin, a faithful employee of the Society for thirty-seven years.

We concur in the Secretary's expression of gratitude for the loyal devotion of Miss Dougherty and the other members of the office staff to the interests of the Society.

Mr. Speaker, I move the adoption of the Reference Committee's report, covering the Report of the Secretary.

.... The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried .....

**Report of the Treasurer.** DR. FLOOD: Your Reference Committee on the Report of the Treasurer recommends hearty approval of the Report as a whole. We commend him for the efficient manner in which our financial affairs have been handled during the past year. We approve the disposition of the matter pending between the estate of the late Kent Lighty and the Society and we approve the present policy regarding solicitation of advertisements for the *JOURNAL*.

We recommend that the liquid cash assets of the Society, such as the various prize funds now on deposit at the Union Dime Savings Bank, be converted to United States War Securities, in the form

of coupon-bearing par value bonds, to such an extent as is practicable.

We view with some concern the mounting financial surplus of this Society, which surplus must eventually be spent or become endangered of future depletion through taxation or inflation.

We, therefore, recommend that our future expenditures for such projects as postgraduate medical education, especially of our demobilized members; the extension of nonprofit medical expense insurance on a state-wide basis; publicity and lay education in all matters relevant to our relationships to the public; and all other projects for the promotion of the public health and welfare be increased in proportion to our assets.

Mr. Speaker, I move the adoption of the Reference Committee's Report on the Report of the Treasurer.

.... The motion was seconded, and as there was no discussion, the motion was put to a vote, and was unanimously carried .....

**Report of the Board of Censors.** DR. FLOOD: The Reference Committee has not received a report of the Board of Censors' activities in the past year. However, we take this opportunity to reaffirm our belief in the integrity of the principles of professional conduct of the Medical Society of the State of New York and recognize that the enforcement of these principles is dependent upon a proper understanding of the rule of right action.

This rule of right action is defined by the Judicial Council of the American Medical Association in its report to the members of its House of Delegates published in the *Journal of the American Medical Association* on April 29, 1944, excerpts from which I take the privilege of quoting at this time:

"At various times, resolutions have been presented in the House of Delegates directing the Judicial Council or an appointed committee to rewrite or more precisely define our principles of medical ethics, giving illustrations of unethical action which would guide the ethical judgment of the membership.

"Such revision of the principles of medical ethics is not the answer to this problem. To illustrate or elucidate would only produce 'confusion worse confounded.' Rather let us firmly identify in our minds these dictionary definitions:

"(a) 'A law is a rule of action established by recognized authority to enforce justice and prescribe duty.'

"(b) 'A principle is (1) a general truth; (2) a settled law or rule of action, especially right action, consciously adopted.'

"(c) 'Ethics is the basic principle of rules of right action.'

"Law which is punitive in action deals only with a specific crime or misdemeanor and must be so particularly applied (witness the row upon row of tomes necessary to the lawyer's library) as to permit no loopholes for evasion. The American Medical Association has no laws to compel its membership to care for the sick or the public at large. That would be foreign to our conception of the principles of medical ethics, which reflect our pride in 'a rule of right action, consciously adopted.'

Mr. Speaker, I move the adoption of the Report of the Reference Committee on the Board of Censors.

.... The motion was seconded, and as there was



no discussion, it was put to a vote, and was unanimously carried.

**District Branches** Dr Flood Your Committee notes with much satisfaction that the various District Branch reports denote a large attendance with excellent scientific programs in which many of the individual members participated. War medicine with its various ramifications proved especially interesting.

Although the President of the State Medical Society, Dr McGoldrick, is a very busy man, he nevertheless took the necessary time to attend each meeting, and by his presence and by his addresses added greatly to the pleasure and interest of all who attended.

Mr Speaker, I move the acceptance of this report on the District Branches.

The motion was seconded, and as there was no discussion the motion was put to a vote, and was unanimously carried.

Dr Flood Mr Speaker I now move the acceptance of the complete report of the Reference Committee consisting of Edward P. Flood, Chairman, Madge C. L. McGinness, Reginald A. Higgins, W. Grant Cooper, and Theodore W. Neumann on the reports of the Secretary, Treasurer, Board of Censors, and District Branches.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

#### Section 71

##### Executive Session

**SPEAKER BAUER** Dr Brady of Erie County, in case of an executive session, you are designated as Sergeant-at-Arms. Dr Clemans of Fulton County, you are assistant to Dr Brady. Dr Buettner, of Onondaga County, you will also be an assistant to Dr Brady.

Dr Simpson are you ready to give your report?

Dr LEO F. SIMPSON Yes.

**SPEAKER BAUER** Dr Simpson's report pertains to Workmen's Compensation. In the opinion of the Chairman, it would be advisable if we went into executive session.

Dr JAMES F. ROONEY, Albany I so move.

Dr LOUIS A. VAN KLEECK, Nassau I second the motion.

**SPEAKER BAUER** It has been moved and seconded that we go into executive session. The Chairman will take it for granted that the Executive Officer, Dr Lawrence, the Director of the Bureau of Public Relations, Mr. Anderson, Mr. Martin, the Legal Counsel, Mr. Clearwater, the Attorney, Miss Dougherty, and of course our stenotypist, Mrs. Grimm will be permitted to remain during the executive session.

Do you wish to include any others?

Dr RALPH T. B. TODD Westchester I move we have the executive secretaries of the county societies.

**SPEAKER BAUER** Is there any objection to including the executive secretaries of the county societies? If not, the motion to go into executive session will except those gentlemen.

The question was called, and the motion was put to a vote, and was unanimously carried to go into executive session.

Dr JAMES F. ROONEY Albany I move we take a recess of two minutes until the room is reported clear of any but delegates.

The motion was seconded and as there was no discussion it was put to a vote, and the recess

was taken in order to clear the room of all but delegates and those named who were permitted to stay for the executive session.

**SPEAKER BAUER** It has been called to our attention that under the motion as worded alternate delegates would be excluded. Is there any objection to including them?

**CHORUS** No.

**SPEAKER BAUER** They will be permitted to remain during the executive session, with the others named.

Mr Sergeant at Arms, are you ready?

Dr JOHN C. BRADY, Erie The hall is cleared of all except the delegates and those named by you who are permitted to remain during the executive session.

**SPEAKER BAUER** Proceed Dr Simpson.

#### HOUSE GOES INTO EXECUTIVE SESSION

*In accordance with custom actions so taken at Executive Session are not published but recorded only in the official office copy of the Minutes of the House of Delegates.*

*However the House on motion duly seconded and carried, unanimously adopted with applause the following report, and directed that it be transmitted to the press and to the Governor.*

LOUIS H. BAUER, M.D., Speaker  
PETER IRVING, M.D., Secretary

#### Section 72 (Sec. 8)

**Report and Supplementary Report of the Reference Committee on Report and Supplementary Report of the Council—Part IX Workmen's Compensation**

Dr LEO F. SIMPSON, Monroe The report of the Council Committee on Workmen's Compensation is really a résumé, not only of the substantial contributions made by the present committee, but also of the work of this committee and the State Society Bureau during recent years.

A close study of this report to the Council reveals that its members possessed a very comprehensive knowledge of the Workmen's Compensation Law, knew well how the law functioned in reality and, in addition, had an acute awareness of how it should have been modified in order that it might more completely accomplish its objectives.

The outstanding work of a former committee of physicians, under the chairmanship of Dr Eugene Pool resulted in the amendments to Section 13 of the Workmen's Compensation Law in 1935. All of their recommendations unfortunately, were not enacted into law. Had their recommendations been fully enacted much of the bad odor liberated by the recent problems would never have been generated. What this committee of physicians did accomplish, however, was constructive, forward-looking, and of great value. The medical profession was given authority, great responsibility, and the unique power of self-discipline.

The magnificent response of the medical profession to the great obligations imposed upon it by the 1935 amendments is a matter of history. The compensation committees of the county societies have carefully and conscientiously discharged their duties—and your Reference Committee subscribes to a statement in the report which says, "We believe it is not too much to assert that no interested parties to the Workmen's Compensation Law, not even the Labor Department, have made

a greater contribution to the public welfare than the medical profession through its agencies."

It may be said also that all of the great work done by the various county societies has been but the lengthened shadow of the Workmen's Compensation Committee of the State Society and of its Bureau.

The prodigious amount of work done by this Council Committee is a monument of honor to the men who have made up the Committee and Bureau through the years.

They have been a continuous advisory committee to all county societies. They were also a public relations committee of the medical profession to the Department of Labor, the insurance carriers, the employers, and the working man.

It has been through the untiring efforts and specialized knowledge of the Committee and of the Bureau of Compensation that organized medicine, through its component societies, has functioned so well. The rating of thousands of physicians who wished to qualify under the provisions of the Law has been a task of great magnitude, and it is the opinion of your Committee that it has been done efficiently and conscientiously. The few complaints that were made by the physicians came from those who thought their ratings were not sufficiently high.

The Bureau, in addition, has ably fought for the legal and financial rights of the physicians under the Law as amended in 1935, against the innumerable assaults that were made upon these rights. Free choice became more than a legal fiction, at least in upstate New York. Fees were paid promptly, special services were more adequately rewarded, and the arbitration of disputed bills was efficiently handled. The medical profession of the State of New York owes a great debt to this Bureau.

Your Council Committee and Bureau have clearly recognized the evils that were inherent in some of the ambiguities and redundancies of the amendments of 1935, and have frequently sought by all means to obtain amendments to the Law, to clarify and simplify the statutes, so that they could be more effectively administered to the end that the medical profession could more effectively carry out its responsibilities. But to little or no avail.

On January 13, 1944, your Council Committee presented to the Council certain recommendations to be presented to the Moreland Act Commission which was then functioning. These recommendations were approved by the Council. More of this later.

After the writing of this report of the Council Committee, the Moreland Act Commission finished its investigations, made its report to the Governor, and suggested and had enacted into law many significant changes in the Law from the viewpoint of the medical profession.

One would imagine from the newspaper accounts of recent months that the main culprit under investigation by the Moreland Act Commission was the medical profession. It is a fact, however, that not only a portion of the medical profession but also a portion of the legal profession, some insurance carriers, some employers, the State Insurance Fund, licensed representatives of the workingman, and the administrators of the Department of Labor itself—all were excoriated in the report to the Governor, and many changes were made in the Law designed to correct not only evils that had arisen in medical administration but also to curb the very questionable activities in all other departments hav-

ing to do with the administration of the Compensation Law.

It may be, perhaps, that the newspapers considered the finding of medical scoundrels to be news—the inference being that the finding of all the other scoundrels in the administration of the law had no news value. (Laughter and applause)

The report of the Moreland Act Commission revealed two outstanding medical evils: one concerned the commercial laboratories, x-ray and others, supply houses for medical appliances, suppliers of oxygen, etc., and the nefarious financial relationship that existed between them and many physicians; second, the activities of many members of the medical profession were exposed, proving them to be without either honesty or professional honor. A few of the latter formed rings with lawyers and licensed labor representatives, aimed at perverting the very law itself, and depriving the workingman of his just rights. Fee-splitting, bribery, flourished on every side.

The Commission, in addition, placed the blame on the compensation boards, especially on four in Greater New York, and on your State Bureau for their inaction and neglect in curing these conditions.

Your Reference Committee feels that this accusation should not pass unchallenged.

First, as to the commercial laboratories: the proposal that the commercial laboratories be banned was made by the Pool Committee, and was included in the original draft of the bill that created the amendments of 1935. This was emasculated through the activities of certain commercial interests, and the way was left open for commercialism in compensation practice. Had the suggestion of the medical profession on this point been enacted into law, the problem of the commercial laboratory, with all of its inherent evils, would have ceased to exist in compensation law. It was, therefore, legal for them to function under the Law, as it was for a certain percentage of the medical profession who, by their general lack of morality, cast a sinister shadow over an honorable profession. We hold no brief for these men. We do not defend them. We do not apologize for them. We condemn them without reservation.

The criticism directed at the compensation boards of the county societies and of your State Bureau by the Moreland Act Commission for their inaction and laxity in curbing these nefarious gentlemen in our opinion is not fully justified, the more so when we see the same commission enact into law a procedure that would give the county society compensation boards a real power and procedure to deal with professional misconduct.

The enactment of this law at the request of the Moreland Act Commission is really an admission on the part of the Commission that the capacity and power of the compensation boards was entirely inadequate to cope with the situation.

Incidentally, it was not until May 4, 1943—eight years after the enactment of the amendments—that the county societies were informed that they were authorized to subpoena witnesses and render the oath to witnesses. We have in this belated interpretation by the Attorney General of the Civil Practice Act an opinion that it is inherent in the Law that the compensation boards of the medical societies have that power. This opinion now is even questioned by legal authorities. The opinion indicated, however, that such authority is not contained in Section 13-d of the Compensation Law it-

self. If the compensation boards had had that definite authority from 1936 on, there would have been no nose-thumbing at the compensation committees of the county societies and far less no e-holding when the probers went to work last year.

Previous to May, 1943, the boards believed they had no such power. Without that power any legal investigation committee is helpless. Without a subpoena a man could refuse to appear, and without an oath only his reputation as a liar would be at stake. The boards had no one to initiate charges,

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conduct so rampant around them would be an insult to their intelligence, that some of them failed to use all the little legal power they had is possible. Knowledge of a crime, and even of a criminal, is one thing, but the serious business of putting a permanent stop to the criminal is still another. To do that, one must have power, and the legal powers of the compensation boards in this serious matter were mythical.

To say that your Bureau and the compensation committees of the medical societies, especially those of Greater New York, were inactive or lax after they were assured of any legal power to try the offenders is—to put it very mildly—untrue. That there was apparent laxity and inaction previous to this was due to the facts contained in the following paragraph taken from the report of your Council Committee on Workmen's Compensation of January 6, 1944:

For many years we have been advised that we possessed no such power of subpoena. This is evidenced by numerous communications to the Industrial Commissioner and from him to us. Specifically, in the year 1937 the Director of Workmen's Compensation of the State Medical Society requested the then Commissioner to issue subpoenas and provide an officer to administer the oath when required or to have investigations made by the Industrial Council of the Department of Labor, which possesses such power. The Commissioner, accepting the general belief that the Medical Society did not possess the power to subpoena etc., agreed to have investigations by the Industrial Council, but such investigations were never held. Our own Counsel and others whom we consulted were of the opinion that unless a specific provision was included in the Workmen's Compensation Law (Section 13-d), we did not possess the powers to subpoena and administer the oath without which no successful investigations or trials could be held."

After the appointment of the Moreland Act Commission and the election of a new Attorney

Commission contained the names of over 1,300 physicians who were accused of unethical conduct. In all, the names of 3,000 were given out. These physicians were under the jurisdiction of the compensation boards of the counties of Bronx, New York, Kings, and Queens.

The names were released from time to time, the last not obtained until January, 1944. All of the physicians whose names appeared on the first lists were heard by the societies and either admitted or denied their guilt. For instance, in Kings County, of 1,110 physicians who were named by the Moreland Act Commission, 380 are in the Army and could not be heard, 400 have pleaded guilty, and the 160 who pleaded not guilty have been tried. Kings County has completed its work as of May 5.

(This investigation showed that of 1,140 men who were accused of unethical misconduct, the total take, as you may say, over a period of three or four years, was \$16,000, which would average about \$14 a man over two or three years, while the Moreland Act Commission accused and convicted one representative of labor who in one year had taken \$13,000.)

It was arranged that all who denied their guilt would have a final trial as soon as all the physicians named had an opportunity to be heard in a preliminary hearing. After a great many had been heard, the counsel of the New York County Society raised the question of the legality of the proceedings, unless charges were first preferred by the Industrial Commissioner, and it was not until April, 1944 that these formal charges were made by the Industrial Commissioner against all of the accused.

Up to the present time the various county society boards of the metropolitan area have heard one tax case.

All of this was done without undue delay, considering the legal questions raised by the counsel for the New York County Society and by others as to the authority of the medical societies to act.

The Department of Labor, as was their apparent right under the Law, held independent hearings to try certain accused physicians. When they revoked the license of one physician to practice under the Compensation Law, he carried it to the Supreme Court, which held that the Department of Labor had no such power.

The mistake, if there is action or the were lax or timid, once they were assured of any power, is absolutely untrue.

Your Reference Committee has also studied the steps taken by the Committee on Workmen's Compensation of the Medical Society of the State of New York concerning the Moreland Act Commission's investigations. This report is dated April 27, 1944.

It is a documented statement of the aid given by the State Society Committee by your Compensation Bureau, by the presidents of the five societies in the metropolitan area, by the chairmen of the compensation boards of these societies, to the members of the Moreland Act Commission—not only in the investigation, but also by their many and valuable recommendations for the improvement

vision in the State statutes to enable the State Society to exercise these powers. Finally, on May 3, 1943, the Attorney General gave the opinion that we have mentioned above. There is nothing in the Law which stated that the Compensation Board must initiate charges against a bureau or a physician. It states merely that it shall hear such charges, determine guilt or innocence, and report its findings to the Industrial Council. The first list of physicians given out by the Moreland Act

of the administration of the Compensation Law. Many of these recommendations are embodied in the new Law, and it is beyond the comprehension of your Reference Committee how this same commission could in any way censure these gentlemen.

We believe that the physicians composing the compensation boards of the county societies throughout the State—and, of course, that includes those of the Counties of Bronx, New York, Kings, and Queens—were in general conscientious, diligent, and trustworthy. Although the rest of the county societies retain their former status, with new powers under the Law, we feel that the substitution of a three-man medical practice committee for the boards of the above-mentioned societies in Greater New York is an affront to the honor and dignity of the medical profession, and that every honorable effort should be made to modify the new Law to the end that these boards be restored to their proper sphere.

Professional honor is a very personal matter with the men who composed these four boards, and it is our opinion that they should be permitted to function under the new powers granted by the Legislature. We also believe that it would make for better administration of the medical aspects of the Compensation Law.

Your Council Committee, as we have stated, made certain recommendations to the Moreland Act Commission, by the authority of the Council.

Your Reference Committee concurs in their validity and wisdom, and although the greater number of their recommendations were recently enacted into law, the few that have not been should be the subject of continued study by this Committee, and again advocated, if the operation of the newly amended Law would indicate their necessity.

The Moreland Act Commission has enacted into Law, which will become operative in June, 1944, many changes that your Reference Committee wishes to point out. Many of these changes were recommended by your Council Committee to them on January 13, 1944. The essential changes, having not been enacted at that time, obviously were not discussed in the report of the Council Committee, but your Reference Committee thought it incumbent upon it to bring matters up to date. They are as follows:

1. The Industrial Council now consists of nine members instead of fifteen. Three members will be physicians and are called the "medical appeal unit" of the Council. They shall consider all matters connected with the practice of medicine submitted to them by the Commissioner and the Industrial Board, and shall prescribe rules and regulations to govern the procedure of investigations and hearings by medical societies of charges against authorized physicians, laboratories, or bureaus.

2. The Compensation boards of the medical societies of the Counties of Bronx, New York, Kings, and Queens are abolished, and in their place is set up a single medical practice committee of three outstanding physicians. The compensation boards of the other county societies remain the same as before. The three-man medical practice committee of Greater New York will have the same power as other societies in authorizing physicians, laboratories, and bureaus. In addition, they will be the arbitration committee, and the hearing and investigating committee, of all charges against physicians, laboratories, or bureaus in that area.

3. The method of arbitrating disputed bills in

other sections of the State has been modified so that now the arbitration board shall consist of two members of the local county society, two from the State Society, and one appointed by the Commissioner.

4. Conviction of fee-splitting in all its forms is now penalized by loss of authorization to function under the Compensation Law, and is also a misdemeanor. In addition, conviction carries with it possible loss of license to practice medicine under the newly amended Education Law. Incidentally, any other person not a physician who attempts to aid a physician in splitting a fee is also guilty of a misdemeanor.

5. Under the new law, commercial x-ray laboratories are put out of business, and only a roentgenologist authorized by the compensation boards, or by the medical practice committee can practice as such under the Law.

6. The medical practice committee in New York City and the compensation boards elsewhere are now to have real power as well as legal assistance in hearing and investigating charges of misconduct against either physicians or licensed bureaus and laboratories.

7. All medical bureaus, laboratories, etc., henceforth must be licensed by the Commissioner, and the new changes in the Law make possible standards of efficiency and professional competency never possible under the old law. In addition, the power to discipline is now very definite.

8. It is now the law that any interference by any person with the selection by an injured employee of an authorized physician to treat him, and the improper influencing of or the attempt to influence the medical opinion of any physician who has treated or examined an injured employee shall be a misdemeanor. (That takes this common practice out of the realm of fun, and places it in a criminal category.)

9. When a claimant is to be examined by a physician employed by the Department of Labor, no physician employed by the employer, carrier, or employee shall be present at, or participate in any manner in, such examination.

10. No claim for medical or surgical treatment will be valid in the future unless within forty-eight hours the physician makes a report to the employer, and also directly to the Industrial Commissioner. Insurance carriers, also, when they have a claimant examined, must file a copy of the report directly with the Industrial Commissioner within ten days.

11. The new law also authorizes the industrial commissioner to employ physicians of outstanding qualifications as committees of expert consultants in such fields of medicine as he deems essential in order to ascertain the diagnosis, causal relationship, or adequacy of medical or surgical treatment in cases in which such matters are not readily determinable by the regularly employed medical examiner in the Workmen's Compensation division.

12. It is interesting to note that under the new law the Industrial Commissioner is made an absolute power. None of the recommendations made to him by a county society board, by the medical practice committee in New York City, by the medical appeal unit of the Industrial Council, are final, binding, and conclusive on him, as in the old law. They are now advisory only, and if he wishes to ignore them he may legally do so.

The new law will soon be effective, and should correct many evils. Whether all of its provisions

are wise can be determined only by experience in its operation. The significance of your Bureau will become apparent. The importance of its work in the past can be estimated only by one who has studied the importance of its manifold activities.

It is estimated that under this law in New York State \$20,000,000 is paid annually for the professional services of physicians. To strive on the one hand to protect the financial rights of the physicians and, at the same time, to insure that the quality of medical service delivered to the workingman is of the highest possible quality are among a few of its functions. Its other duties have been many, arduous, and exacting, and it is the opinion of your Reference Committee that they have all been discharged in a very adequate manner. It should have the enthusiastic and unwavering support of the medical profession. The Bureau of the Medical Society of the State and the personnel of the medical profession are partners in the great enterprise of rendering the highest type of medical care to the workingman, and the dignity and com-

We feel sure that your Council Committee and Bureau will ever bear in mind the obligation to use the full activities of the societies of the State, and Queens, and the new law, your Reference Committee has but one recommendation to make

It is one that we have obtained from a study of a contribution to this subject by a committee of the New York Academy of Medicine, slightly amended.

Our recommendation is this: That in so far as the medical aspects of the Workmen's Compensation Law are concerned, the Governor be petitioned to appoint each year a state-wide committee of physicians to review the situation, and to suggest such studies or changes as might be indicated in order that weaknesses of the law or of its administration

OF LEO I.  
John J.  
V. Strohm,

The motion was seconded by several. . . .  
SPEAKER BAUER: You have before you the motion of the Reference Committee on what the Chairman considers is a most comprehensive and very important subject. . . .  
The subject is of great importance and the committee has made a most commendable effort to bring out a most comprehensive and important subject. . . .

The question was called for, and the motion was put to a vote, and was unanimously adopted amid applause. . . .

DR. LAURENCE D. REDWAY, Westchester: May I request the privilege of this floor as an editor of the JOURNAL of this Society:

SPEAKER BAUER: You may.

DR. REDWAY: In justice to the many physicians who for so many years have labored to make the content of this report possible, and also in justice to the physicians of the State who have carried on the compensation work in this State so commendably, and also in justice to the enormous amount of work that this Reference Committee has put it on

this report, I request the privilege and the vote of this House for permission to publish this report in the JOURNAL of the State Society.

DR. JAMES F. ROONEY, Albany: I second that motion.

DR. REDWAY: In its entirety.

There being no discussion, the motion was put to a vote, and was unanimously carried. . . .

SPEAKER BAUER: You have the authority, Dr. Redway.

#### Section 73-74

(Sections 73 and 74 appear in the office copy of the Minutes only.—Secretary)

SPEAKER BAUER: The House will now rise from executive session, unless there is objection. I take it there is none. The Sergeant-at-Arms and his assistants are thanked, and the doors can now be opened.

#### Section 75. (Sec 4-5)

#### Report of Reference Committee on the Reports of the President and President-Elect

DR. W. GUERNSEY FLY, Jr., Queens: The admirable report of the President, Dr. Thomas A. McGoldrick, review of the past year. The summary is so concise, the conclusions expressed are so unquestionably representative of the viewpoint of the membership, that your Committee can but recommend the entire report to the careful perusal of every member.

We single out only a few items from the report for particular notice. Dr. McGoldrick points with pride to the fact that 10,000 doctors from New York State are in the armed forces, but he does not overlook the fact that with greatly depleted ranks and reduced facilities of all kinds, the medical men not in uniform have carried on, the health of the home front has been maintained, and the science of medicine has been advanced. He commends particularly the activities of the Council Committee on Public Health and Education.

In commenting on the Federal Emergency Maternity and Infant Care Program, the President well expresses the views of the Society in the following words:

"With the object of the Act, to provide maternity and infant care for the wives and babies of members of the armed forces in the four lower grades, let me express our complete accord. With such details as the interposition of a third party, . . . . . we are in complete agreement."

As an alternative to the undesirable features in national

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committees of the Society who have most distinguished themselves in unselfish service, but omits mention of most of the President's own continuous and arduous labors in our behalf. Nowhere does he mention his traveling up and down the State, speaking before meetings of District Branches and county societies, his innumerable conferences with

government officials and boards, his endless correspondence, letters to the press, interviews, after-dinner addresses, the thousand and one items of personal sacrifice which he takes for granted under the code of *noblesse oblige*. For us to pass them by without a word would be ingratitude indeed.

The Society has exercised noteworthy discrimination in selecting for the presidency a succession of men of distinguished professional and administrative ability. Dr. McGoldrick carries on the brilliant record of a long line of very able predecessors. The President is the representative of and spokesman for the medical profession in the State; by his own character, presence, and prestige, he enhances the respect in which medicine at large is held throughout the laity. This Reference Committee speaks for the inarticulate body of practitioners of medicine throughout the State in expressing to Dr. McGoldrick the Society's recognition of the tremendous personal sacrifices he has made for it during this year of ordeal, and its appreciation.

I move the adoption of this section of the report of the Reference Committee.

... The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. ....

DR. FREY: Your Reference Committee had referred to it also the remarks of President-Elect Bauckus.

SPEAKER BAUER: Yes.

DR. FREY: President-Elect Bauckus in his address to the House of Delegates reviews the activities of the State Society and points out certain important features which will be stressed during his administration—namely: provision for returning to practice discharged medical officers of the armed forces; continued support of the A.M.A., particularly its Council on Medical Service and Public Relations; opposition to the Basic Science Law on the ground that it will not eliminate chiropractic, but will cause it to be recognized by licensure (this has been the experience in those states having basic science laws); continued development of post-graduate instruction in cooperation with the State Department of Health.

The President-Elect feels very strongly that tuberculosis should be treated as a contagious disease, patients to be isolated from contacts and given necessary financial aid.

He urges that the Planning Committee on Medical Policies be continued.

He would have the members of the Society co-operate in the E.M.I.C. plan and hope for improvement in its medical provisions, emphasizing the supposedly temporary nature of this wartime setup.

The Reference Committee looks with favor on Dr. Bauckus' recommendation that

"we . . . cooperate to the full in the development of sound health programs"

set up by the State government, but because of the ambiguity of this statement we would urge caution in endorsing any plan before it has received approval by this House of Delegates.

Dr. Bauckus gives it as his personal opinion that the practice of compensation medicine in the State of New York is important enough to warrant the employment of a state-wide director. This Reference Committee cannot express an opinion on this matter, which is being considered by another reference committee.

Dr. Bauckus announces the merger establishing the United Medical Service Corporation, providing

prepaid medical insurance for the seventeen southern counties of the State, and he recommends the organization of a bureau to study and plan state-wide medical insurance plans.

In condemning the medical provisions of the Wagner-Murray-Dingell bill as an untried experiment, he states, "It is unfortunate that the leaders of labor seem willing to so soon forsake our proved care for this will-o'-the-wisp. For I believe we still are, and always will be, the most practical and understanding friend of the laboring man and his family."

Your Reference Committee commends the address of the President-Elect as indicative of his thorough grasp of the business of the Society, gained through his many years of active service. It feels that the members of the Society may disperse to their homes secure in the knowledge that for another year the Society is being guided by a leader who walks with God and quotes His Holy Word.

I move the adoption of this portion of the Reference Committee's report.

... The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. ....

DR. FREY: Now I move the adoption of the Reference Committee's report, signed by W. Guernsey Frey, Jr., Robert C. Simpson, Horace E. Ayres, Charles A. Prudhon, and John E. Wattenberg, as a whole.

... The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. ....

SPEAKER BAUER: Thank you, Dr. Frey.

#### Section 76. (See 13, 60, 81)

#### Report of Reference Committee on Constitution and Bylaws Amendments—Redistribution of County Delegates; Expenses of A.M.A. Delegates

SPEAKER BAUER: Dr. Holcomb, we threw you out yesterday, but we will let you come back now.

Dr. Holcomb is Chairman of the Reference Committee on Constitution and Bylaw Amendments. You recall that we started to consider his report yesterday, and it was postponed until there was a greater representation present today.

You may begin the report from the start again, as I doubt whether we remember exactly what was said last night.

DR. FREDERIC W. HOLCOMB, *Ulster*: In regard to the proposed amendment to the Bylaws, Chapter II, Section 1, which is as follows:

"WHEREAS, the recently enacted reapportionment bill is based upon the population ratio and will thereby cause a redistribution of delegates from the component medical societies to the House Delegates to the Medical Society of the State of New York; therefore be it

"Resolved, that the number of delegates from any component medical society be not reduced from their present number unless there has been a material reduction of the number of physicians in the area of any county medical society,"

your Reference Committee disapproves this proposed amendment for the following reason: The wording of this amendment is indefinite as to this portion—"unless there has been a material reduction of the number of physicians in the area of any county medical society." No definition of the word "material" is given.

I move the adoption of this portion of the report.

... The motion was seconded. ....

SPEAKER BAUER: The Reference Committee

recommends disapproval of the proposed amendment. The motion is on the adoption of the Reference Committee's report, which carries with it disapproval of the amendment. Is there any discussion?

DR HARRY ARANOW, *Bronx* Just a point of information. What is the legal effect of this? I had an idea that according to our constitution any group can propose an amendment and that it has to come before the House for consideration the next year.

SPEAKER BAUER Right and it is before the House right now.

DR ARANOW But was it proposed last year?

SPEAKER BAUER It was proposed last year and because there were two amendments on the same subject and they were both indefinite it was referred to a reference committee for clarification, and it is now before the House.

Is there any other discussion?

The question was called for, and the motion was put to a vote, and was carried.

SPEAKER BAUER The motion is carried and the amendment is lost.

DR HOLCOMB In regard to the proposed amendment to the Bylaws Chapter II Section I which was introduced by Dr Albert Cinelli and which provides

"Each component county society shall be entitled to elect as many delegates as there shall be State assembly districts in each county at the time of the election but each component county medical society shall be entitled to elect at least one delegate."

Is to be amended to read,

"Each component county society shall be entitled to elect delegates in proportion to the number of doctors practicing at the time of election but each component medical society shall be entitled to elect at least one delegate."

Your Reference Committee disapproves this amendment for the following reasons. The wording of the amendment is too vague and indefinite, as it states that 'Each component society shall be entitled to elect delegates in proportion to the number of doctors practicing in the county.' Your Refer-

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discussion, it was put to a vote, and was carried.

SPEAKER BAUER The motion is carried, and the amendment is lost.

DR HOLCOMB It is proposed to amend the Bylaws, Chapter V, Section I, which is as follows:

'The delegates to the American Medical Association who have attended each session of the House of Delegates of that Association and who shall have filed with the Secretary evidence of such attendance shall be allowed the actual cost of railroad transportation and Pullman accommodations to the place of meeting and return.'

by inserting in its place

The delegates to the American Medical Association who have attended each session of the House of Delegates of that Association and who shall have filed with the Secretary evidence of

such attendance shall be allowed traveling expenses."

Your Reference Committee approves the proposed amendment and moves its adoption.

I believe that will have to be acted on first before a further recommendation is put before you, or shall I give you the further recommendation to the Council now before you act on this portion?

SPEAKER BAUER Does it pertain to that same amendment?

DR HOLCOMB It does.

SPEAKER BAUER Let us have your further recommendation first, then, before we act on this portion of the report.

DR HOLCOMB We further recommend to the Council that the term "traveling expenses" be considered to include the cost of one first-class round trip railroad fare with cost of Pullman lower berth from home to place of meeting and, in addition a per diem allowance of \$10 while acting as a Delegate.

We felt we should specify what that term meant in some definite way.

SPEAKER BAUER That is to clarify the intent of the Reference Committee?

DR HOLCOMB Yes.

SPEAKER BAUER Are you moving that as an instruction to the Council or as an amendment to the Bylaws, to be incorporated in the Bylaws?

DR HOLCOMB That is a recommendation to the Council not to be incorporated in the Bylaws.

DR JAMES F. ROONEY, *Albany* There is only one thing that occurs to me, and that is the reference to the review by the Secretary. Taken in connection with the rest of the text that could apply either to the Secretary of the American Medical Association or to the Secretary of the Medical Society of the State of New York. I would move in view of the fact that the Bylaw is now up for discussion and may be amended from the floor, that we add the words "of this Society" after the word "Secretary" in other words, that evidence of attendance shall be given to the Secretary of this Society.

SPEAKER BAUER Is there any objection to incorporating that clause in the amendment?

DR HOLCOMB None from the Reference Committee. It is merely a clarification.

DR JAMES F. ROONEY Exactly.

DR GEORGE W. KOSMAK I have another—

SPEAKER BAUER Does your point apply to this suggested amendment?

DR KOSMAK No.

SPEAKER BAUER Let us dispose of one at a time then. Is there any objection to clarifying the proposed amendment by the inclusion of that phrase?

There was no dissent expressed.

SPEAKER BAUER The Chairman hears none, and it will be so incorporated.

DR KOSMAK As I understood the reading of the proposed amendment, the delegate is required to present evidence of his attendance to the Secretary of the State Society. Would it not be much better to accept the roll call of the Secretary of the American Medical Association as evidence of a delegate's attendance? It is rather difficult for the delegates individually to present this evidence. It could be taken from the records of the American Medical Association itself, and this would be much simpler.

DR ARTHUR J. BEDELL, *Albany* The whole thing can be phrased in words like these "as certified by the Secretary of the American Medical

Association to the Secretary of the New York State Medical Society." That is the legal form.

SPEAKER BAUER: The suggestion of Dr. Bedell is that it be still further amended by stating that the certification shall be by the Secretary of the American Medical Association to the Secretary of the Medical Society of the State of New York. Is there any objection to incorporating that in the amendment?

DR. ROONEY: It seems to me that we have had three suggestions as to a change in the Bylaws, which have a legal import. I would make the motion that these recommendations be conveyed to the Reference Committee, that they incorporate these changes, if there is no objection, in the proposed Bylaws, first consulting the Counsel of the State Society as to the proper legal terms to be used, and then re-present the matter to the House. That should not take a long time, and it can be re-presented later this morning.

SPEAKER BAUER: In other words, you are moving that it be recommitted?

DR. ROONEY: Yes.

SPEAKER BAUER: Is there objection?

.... There was no dissent. ....

SPEAKER BAUER: The Chairman hears no objection, so it is recommitted.

#### Section 77. (See 61, 34)

#### Report of Reference Committee on Report of the Council—Part XI: Malpractice Defense and Insurance and Legal Counsel (Resolutions Included)

DR. MOSES H. KRAKOW, *Bronx*: Your Reference Committee has reviewed the report of the Council Committee on Malpractice Defense and Insurance, Dr. Clarence G. Bandler, *Chairman*.

We note with satisfaction that the following reductions and other changes have become effective for all policies dated after April 1, 1944:

(a) The base premium for a minimum policy reduced from \$32 to \$30.

(b) The table for excess of the minimum reduced by about 10 per cent.

(c) The surcharge on added protection on account of "cosmetic" plastic surgery reduced from 50 per cent to 10 per cent.

(d) The surcharge for including protection for x-ray therapy reduced from \$30 to \$15 for minimum limits.

(e) A further reduction for members in the armed forces to 30 per cent of the premium—liability is, however, limited to claims within continental limits of the United States.

(f) Inclusion of liability on account of the acts of an insured copartner.

We endorse the Committee's recommendation that uninsured members of the State Society secure immediate protection in the group insurance plan, as well as the oft-repeated warning to the members to use the greatest care in avoiding thoughtless criticism of their conferees, which continues to be the largest inspiration for malpractice actions.

It is evident from Paragraphs 5 and 6 of the Report that the Insurance Committee is apprehensive lest the Group Malpractice Insurance Plan, which has been in existence for over twenty-three years, may be disrupted and this important function of the State Society nullified. It is also evident that the Insurance Committee senses a definite unrest among members of some of the county societies who would go outside of the Group Plan to secure

malpractice protection. A reference is made to activities of other insurance carriers who, from time to time, decide to enter the malpractice insurance business in New York State in competition with the Group Plan.

Your Reference Committee is in agreement with the Committee's comment that the group insurance plan is an important function of the State Society and that all component county societies should support the Group Plan.

We, therefore, suggest that attempts be made to increase the list of participants in group insurance by more active publicity and solicitation.

Your Reference Committee recommends that the Council Committee on Malpractice Defense and Insurance proceed to make a survey of the entire malpractice insurance situation and bring in recommendations to the Council.

I move the adoption of this report.

.... The motion was seconded. ....

SPEAKER BAUER: You have before you the Report of the Reference Committee which recommends, after surveying the work of the Committee for the past year, that the Council Committee on Malpractice Defense and Insurance survey the whole situation relative to malpractice insurance and render a report to the Council. Is there any discussion on that motion?

DR. THOMAS M. D'ANGELO, *Queens*: I should like to ask a question. I did not quite get the last part of the report as read. Does it refer the matter back to the Council Committee on Malpractice Defense and Insurance or to a special committee?

SPEAKER BAUER: The Council Committee, as I understood it.

DR. KRAKOW: Yes, the Council Committee on Malpractice Defense and Insurance is to make a survey of the situation and report to the Council.

DR. D'ANGELO: Then I would like to speak on that.

SPEAKER BAUER: You may have the floor.

DR. D'ANGELO: Mr. Speaker and Members of the House, I have introduced a resolution on this very matter, and it will probably come up later, but in adopting this part of the Reference Committee's report you will have to consider a portion of the resolution that I brought in, and that is why I am speaking on it now.

Your Reference Committee recommends that the matter be studied again through the Committee on Malpractice Defense and Insurance of the Council. I imply no criticism whatsoever as far as that Committee of the Council is concerned, but I feel that the Council should appoint a subcommittee to study the entire matter, that subcommittee to report to the Council on its findings. My resolution proposes that a copy of such findings be sent to each county medical society. I think this matter is very important.

Shall I speak on that resolution or wait until it comes up?

SPEAKER BAUER: I take it you are in accord with the Report of the Reference Committee except that part of it which recommends that the matter be studied by the Council Committee on Malpractice Defense and Insurance, and instead you wish a separate committee to do that?

DR. D'ANGELO: That's it exactly.

SPEAKER BAUER: Then it will be your privilege to move an amendment to the report accordingly, if you so desire.

DR. D'ANGELO: I, therefore, move to amend



the report to the effect that a special committee of the Council be appointed to study this matter, and that this special committee then make its report to the Council itself.

The motion was seconded.

**SPEAKER BAUER** You have before you for consideration the amendment to the Committee's report, to the "Council Committee on Malpractice Defense and Insurance." The amendment is to delete and insert the following: "The Council shall appoint a special committee to study this matter."

**DR. FREDERICK W. WILLIAMS, Bronx** Speaker and Members of the House of Delegates, this is also closely related to the instruction which we were given by our county society. Our resolution, as you remember, distinctly felt that the Insurance Committee had delegated too much of its power to our Insurance Representative. I am quite sure that, in keeping with the intent of our resolution, to refer this directly or give a dictate to the Insurance Committee to investigate the field would be quite inadequate.

**SPEAKER BAUER** Is there any further discussion on the amendment? If not the question is, shall the committee's report be amended by substituting a special committee of the Council for the Council Committee on Malpractice Defense and Insurance?

All those in favor of the amendment will please say "Aye," those opposed, "No." The amendment appears to be, and is declared, lost. Does anyone question that ruling?

There was no response.

**SPEAKER BAUER** Therefore, the question now is on the adoption of the Reference Committee's report.

**DR. EDWARD P. FLOOD, Bronx** May I suggest an amendment to the Reference Committee's report?

**SPEAKER BAUER** You may.

**DR. FLOOD** The suggestion is that it be publicized, that it is the implied duty of every official of every subsidiary or county medical society to encourage adherence of the membership to the Group Plan until such time as it has been determined that the policy of this House is no longer to support the Group Plan.

**SPEAKER BAUER** Do you make that in the form of an amendment?

**DR. FLOOD** Yes.

**SPEAKER BAUER** You have the amendment proposed by Dr. Flood, is it seconded?

It was seconded by several.

**SPEAKER BAUER** Is there any discussion on the amendment?

**DR. JOSEPH A. GLIS, Essex** Has this House of Delegates the right to order the officers of the various county societies to do a certain thing? I raise that as a point.

**SPEAKER BAUER** It was not to order them. It was to call their attention and suggest to them that they do that correct. Dr. Flood?

**DR. FLOOD** Yes.

**SPEAKER BAUER** The substance of the motion was that the officers of the county societies should be asked to bring this matter to the attention of the county societies and urge all members to take part in the Group Plan so long as the State Society supported the Group Plan principle.

Is there any further discussion on the amendment?

The question was called for, and the motion was put to a vote, and was carried.

**DR. BAUER** The motion is carried, and the question now before you here any further

or, and the motion was put to a vote, and was carried.

**SPEAKER BAUER** The report as amended is adopted.

Will you continue Dr. Krakow?

**DR. KRAKOW** This is on the Report of the Legal Council. The report of the activities of the legal department of the Medical Society of the State of New York is for the period from February 1, 1943, to February 1, 1944, and covers the activities of the present Council, Mr. William F. Martin, and also two and one-half months during which his predecessor, the late Lorenz I. Brosnan, was Council. The report is in three parts: (1) litigation, (2) counsel work, and (3) legislative advice and activity.

**1 Litigation**—We note that during the reporting period 87 suits were commenced and 92 disposed of as follows: settled, 37, terminated in favor of the physician, 52, judgment for plaintiff, 3.

The figure of the new actions is substantially lower than that of a year or two ago. It is to be noticed, however, that many member physicians are now in litigation because of statutory changes.

**Insurance Plan**—The Insurance Plan sponsored by the Medical Society, pointing out the frequent law suits against uninsured doctors.

The 87 cases mentioned do not include a number of outstanding claims on which suits may be instituted ultimately. The Council did a great deal of preventive work, which by consultation with many of our attorneys helped to avoid cases which would have been appreciated by the members of the Yorkshire Indemnity Company. Bandler and his Committee.

**2 Counsel Work**—The Council has attended to all the legal matters of the State Society as well as those of the component county societies. The Council drew the contracts between the Society and Dr. Joseph S. Lawrence, its Executive Officer, Dr. Peter Irving, Secretary and General Manager, and Mr. Dwight Anderson, Director of the Public Relations Bureau and Business Manager of the Journal and Directory.

The Council has also responded to the numerous requests for opinions, both oral and in writing, on many topics, about the legal responsibility of physicians.

**3 Legislative Activities and Advice**—During the sessions of the State Legislature in Albany in 1943 and 1944, the Council examined a number of bills affecting the medical profession and gave advice in respect thereto, he also has frequently conferred with Dr. Lawrence in regard to these bills. Mr. Clearwater, the attorney, has attended the conferences of the Committee on Legislation with the chairmen of the county societies legislative committees in Albany.

The report is close to the work of his assistance of members both in court and in malpractice actions. The next...

.... The question was called for on the amendment, and the amendment was put, and was lost. . .

**SPEAKER BAUER:** You have now before you the report of the Reference Committee as amended by Dr. D'Angelo's motion. Is there any further discussion?

.... The question was called for, and the motion as amended was put to a vote, and was carried. ....

**DR. KRAKOW:** The following resolution was introduced by Dr. F. Williams of the Bronx County Society:

"WHEREAS, there is an Insurance Committee of the Medical Society of the State of New York; and

"WHEREAS, one of the functions of this Committee is to supervise the Group Plan of Malpractice Insurance in order to provide for the membership protection in a reliable and sound company at as low a rate as possible; and

"WHEREAS, this Committee has failed to function satisfactorily but has evaded its responsibility by the abdication of its function to the Insurance Representative; and

"WHEREAS, an insurance company other than that under the Group Plan, reliable and sound, has entered the field in our county; and

"WHEREAS, this company has sold similar protection to individuals at a substantially lower rate than that under the Group Plan; and

"WHEREAS, this condition has disrupted the Group Plan in our county; and

"WHEREAS, this condition will eventually result in disunity throughout the State Medical Society; therefore be it

"Resolved, that the Bronx County Medical Society instructs its Delegates to the State Society Convention to bring this matter before the House of Delegates at its 1944 meeting; and be it further

"Resolved, that the present leading competitor in the field of malpractice insurance be given a hearing and that each county society be informed of the reasons for rejecting or accepting this company; and be it further

"Resolved, that the Insurance Committee of the State Society be directed to meet with other active competitors in malpractice insurance and submit regular reports on these meetings; and be it further

"Resolved, that copies of these resolutions be sent to the county medical societies throughout the State immediately."

Your Reference Committee on the Report of the Council, Part XI, has recommended a comprehensive survey of the Group Malpractice Plan. We feel that the substance of this resolution has been incorporated in the recommendations of your Reference Committee, and therefore no action need be taken on this resolution.

I move the adoption of this report.

.... The motion was seconded, and as there was no discussion, it was put to a vote, and was carried. . .

## Section 78

### Report of Reference Committee on Report and Supplementary Report of Council—Part VIII: Legislation

**DR. EUGENE H. COON, Nassau:** The Reference Committee on Legislation has studied the Report of the Council Committee on Legislation, its supplementary report, and the several legislative bulletins which it has issued.

We wish to commend the legislative subcommittees for their earnest work. Dr. Leo F. Simpson was appointed chairman of a subcommittee to study the merits of the Basic Science Laws by our Past-President, Dr. George W. Cottis. Dr. Simpson's committee, in its report, emphasized that the educational requirements demanded for licensure to practice medicine or the healing art should be met by all candidates. These standards should not be lowered. A basic science law is not needed to curb the activities of the various illegal cultists. A proper enforcement of the law, as it now exists, would be entirely adequate. Dr. Ralph Todd acted as chairman of the chiropractic subcommittee at the request of our President, Dr. Thomas A. McGoldrick. Dr. Todd reported for his committee that the standards of those who practice medicine should ever reach for higher levels, never for lower ones. All who practice the healing art in our State should meet the qualifications as set down in the laws and the regulations of the medical and osteopathic practitioners. The maintenance of high uniform standards for all medical practitioners is insisted upon.

During the 1944 session of the Legislature many bills which related to public health, medical education, medical practice, and workmen's compensation were introduced. The commissioners appointed to investigate the problems of workmen's compensation under the Moreland Act reported to the Governor, and a large number of bills were introduced to amend the Workmen's Compensation Act. For the greater part they were hastily enacted into law. The methods of authorizing physicians to do compensation work and of licensing compensation medical bureaus and laboratories in New York City has been changed, as reported this morning by our President, Dr. Thomas A. McGoldrick. We earnestly hope that this will be an improvement on the previous method. Time will tell.

We feel that the newly enacted amendments to the Workmen's Compensation Law should be supported, with the reservation that this support will be withdrawn unless, after the new law has been in operation and experience demonstrates a need for revision, the recommendations of the medical profession are given proper hearing and consideration.

The joint legislative committee to investigate the practice of chiropractic reported to the Governor. A bill which embodied the committee's recommendations was introduced in the Senate and the Assembly. It was recommitted in the Assembly, where it was killed by adjournment.

Quoting from the Report of the Council Committee on Legislation:

"At the conference of the county societies' legislative chairmen held in Albany on February 29, after long debate on both the basic science law and chiropractic, a motion was carried instructing the State Legislative Committee to prepare and offer amendments to the chiropractic bills."

Your Reference Committee is in strong opposition to this procedure. We say to the House that there can be no compromise. We must continue with every device at our command to oppose legislation that would legalize chiropractic. It is easy to rationalize appeasement by terming it expediency or practicality, but it should be recognized for what it is: sacrifice of principle and betrayal of a sacred trust. As the guardians of the public health we must aim to defeat, not amend, chiropractic

bills. Here is the ideal application of the principle enunciated by Dr. Simpson's committee: proper enforcement of the present Medical Practice Act.

We heartily agree with the Council Legislative Committee that it is regrettable that some legislators could report on the floor of their chamber that they had been approached by chiropractors to support their bill, but had not been requested by a physician or other person to oppose the bill. We suggest that each delegate bring this to the attention of his respective society and its legislative

The enactment of several welfare bills furthers the advancement of state medicine.

Your Reference Committee compliments the Council's Committee on Legislation, Dr. John L. Bauer, Chairman, Dr. Walter W. Mott, and Dr. Leo F. Simpson, for its untiring and industrious efforts during the past year. We also acknowledge the splendid accomplishments of Dr. Joseph Lawrence, Executive Officer.

This report is respectfully submitted by the committee consisting of Eugene H. Coon, Chairman, Abraham Koplowitz, James S. Lyons, Joseph C. O'Gorman, and Ezra A. Wolff.

I move its adoption.

.... The motion was seconded. ....

**SPEAKER BAUER:** You have before you the Report of the Reference Committee on Legislation. Is there any discussion?

**DR. CHARLES GULLO, Livingston:** There is a resolution before one of your reference committees, on which you have not as yet had a report, that touches upon the Basic Science Law, and I move, in view of the fact that that report has not yet come in, that that part of the Reference Committee's report which says it is the opinion of the Committee not to approve the Basic Science Law be postponed until such time as we discuss the report on the resolution.

The reason that I ask you to do that is that I have here the full report of Dr. Simpson, Dr. Mott, and Dr. Bauer, which was submitted to the Council. As you know, this House instructed this Committee to study the efficacy of the Basic Science Law as it applies to New York State and to the particular conditions that exist in this State. I will read to you part of that report: "We have carefully considered it in its relation to the problem of the licensing of chiropractors."

As just reported by another committee, and as voted, we are against the licensing of chiropractors in any shape, form, or manner. We have always been that way in our feelings. Therefore the ... but, unfortunately the ... ider it in its relation to ... respect to the greater scope of the Basic Science Law—namely, whether it will prevent and eliminate all cults in this State.

**SPEAKER BAUER:** Do you make a motion, Dr. Gullo?

**DR. GULLO:** Yes, I am making the motion that this be tabled until the other Reference Committee reports on the resolution that was presented in regard to the Basic Science Law.

**SPEAKER BAUER:** That is not tabling, that is postponing action.

**DR. GULLO:** Right, postponing action.

**SPEAKER BAUER:** Dr. Gullo moves that the adoption of this report be postponed until after the resolution on the Basic Science Law is returned by the other reference committee. Is there any discussion on the postponement?

**DR. EZRA A. WOLFF, Queens:** It seems to me that we postponed the other resolution to await the completion of this report.

**SPEAKER BAUER:** The one you are now referring to is the resolution pertaining to the enforcement of the Medical Practice Act, as reported on by the Reference Committee on New Business B. That was postponed until after the Reference Committee on Report of the Council, Part VIII, on Legislation, was received.

**DR. WOLFF:** Right.

**SPEAKER BAUER:** But Dr. Gullo is referring to the resolution presented by Dr. Kneckerbocker on the Basic Science Law, and which has not been reported on as yet. Am I right?

**DR. GULLO:** Yes.

**DR. THOMAS M. D'ANGELO, Queens:** I disagree with Dr. Gullo as to the effect of adopting this report.

The adoption of this report does not necessarily mean that the Basic Science Law cannot be brought before this body. I do not think we should inject the Basic Science Law into this report, but we should consider it when the Reference Committee reports on the resolution.

**DR. JAMES F. ROONEY, Albany:** I second the remarks of the previous speaker. I don't think we should have all of these postponements. It is simply going to prolong the session of the House of Delegates. Let us proceed with the consideration of this report and take up the consideration of the Basic Science Law when that Reference Committee reports.

**DR. GULLO:** Very well, I withdraw my motion.

**SPEAKER BAUER:** Is there any objection to the withdrawal of the motion?

.... There was no dissent expressed. ....

**SPEAKER BAUER:** There appears to be none; therefore, we will proceed with the original motion, which was the adoption of the report of the Reference Committee on the Report of the Council, Part VIII, on Legislation.

**DR. ARTHUR J. BEDELL, Albany:** I should like to call the attention of the House to what seems to me to be a ... policy started by the ... relation.

**DR. ROONEY:** ... it is the report of the ... chairman's meeting at Albany, to which you are referring, and which is not mandatory.

**DR. BEDELL:** May I read it, sir?

**SPEAKER BAUER:** Go ahead.

**DR. BEDELL:** "At the Conference of the County Societies' Legislative Chairman held in Albany on February 29, after long debate on both the Basic Science Law and chiropractic, a motion was carried instructing the State Legislative Committee to prepare and offer amendments to the chiropractic bills"—something that this Society should never stand for

authorized ... ho is not therefore, ... legates. I, this Reference Committee in stating that it is in strong opposition to this procedure. I have taken this time, Mr. Chairman, to draw attention to that valuable report of the Committee, and to ask that special attention be paid to it in the future. (Applause)

**SPEAKER BAUER:** Is there any further dis-

cussion on the adoption of the report of the Reference Committee?

.... The question was called for, and the motion was put to a vote, and was carried. ....

#### Section 79. (See 62)

#### Report of Reference Committee on New Business A—Minimum Medical Fee Schedule of the Workmen's Compensation Law

DR. JOHN D. CARROLL, *Rensselaer*: This report is on the resolution presented by Dr. A. Kopolowitz, of Kings County, regarding Minimum Medical Fee Schedule of the Workmen's Compensation Law, reading:

"WHEREAS, the minimum Medical Fee Schedule of the Workmen's Compensation Law was established by the Industrial Commissioner of the State of New York during normal times; and

"WHEREAS, on and after May 15, 1942, the hospitals of the State of New York were granted an increase in fees by the Industrial Commissioner following a conference and agreement by the representatives of the compensation insurance carriers and the Hospital Association of New York State; and

"WHEREAS, the cost of living has increased within the past few years; therefore be it

"Resolved, that the Medical Society of the State of New York take such appropriate action as is necessary with the Industrial Commissioner of the State of New York and the representatives of the compensation insurance carriers that an increase be granted to the medical profession for fees in the present 'Minimum Medical Fee Schedule.'"

The Committee approves this resolution, and I move its adoption.

.... The motion was seconded. ....

SPEAKER BAUER: You have before you the recommendation of the Reference Committee which calls for the approval of this resolution. Is there any discussion on it?

DR. ARTHUR J. BEDELL, *Albany*: I ask for the deletion of one word, and that is "minimum."

While I have the floor, I wish to call to the attention of the House that we adopted this Compensation Law during my presidency and not Dr. Sondern's. I then spoke against this fee bill and said that we would regret it, for what we called minimum would be considered maximum. If you will look over your legislative enactments, you will find that shortly after the adoption of this minimum fee schedule a little rider to the Law was passed through the Legislature, making it the maximum.

Therefore, I don't like the word "minimum," and ask that it be deleted—or fold your hands and remember it will go down all the time. I am heartily in favor of the resolution otherwise.

SPEAKER BAUER: Dr. Bedell moves to amend the resolution by striking out the word "minimum." Is there any objection?

.... There was no dissent expressed. ....

DR. CARROLL: None on the part of the Committee.

SPEAKER BAUER: The Chairman hears none, and it is so amended.

The question is on the adoption of the report as amended. Is there any further discussion?

.... The question was called for, and the motion was put to a vote, and the resolution as amended was adopted. ....

#### Section 80. (See 65)

#### Report of Reference Committee on New Business A—Basic Science Law

DR. JOHN D. CARROLL, *Rensselaer*: This report is on the resolution, slightly amended with the consent of the introducer, presented by Dr. H. J. Knickerbocker, of Ontario County, on the Basic Science Law, reading:

"WHEREAS, experience has shown that existing laws in New York State have proved ineffective in preventing the growth of the illegal practice of medicine; and

"WHEREAS, it is in the interest of the public health that steps be taken now, directed towards the eventual elimination of illegal practitioners through the enactment of laws which would effectively raise the degree of education of such practitioners to such a level that they might justly become legal practitioners, be it

"Resolved, that the House of Delegates of the Medical Society of the State of New York instruct its Legislative Committee that it have introduced a bill at the next session of the Legislature of the State of New York providing for the enactment of new legislation to the Education Law of New York State to guard against, and to prevent growth of, all illegal practitioners, and that such proposed legislation be known and designated as the Basic Science Law, which shall provide, as a prerequisite for license to practice the Healing Art, satisfactory study and examination in the basic sciences—namely, anatomy, physiology, physiologic chemistry, bacteriology, pathology, and hygiene."

Your Committee sees no objection to a Basic Science Law as stated in this resolution.

It is not a recognition of any cult, and it would not defeat any efforts to thwart the licensing of any or all cults.

Your Committee unanimously approves of this resolution, and I so move.

.... The motion was seconded. ....

SPEAKER BAUER: You have before you the adoption of the report of the Reference Committee, which recommends the approval of this resolution. Is there any discussion?

DR. JACOB WERNE, *Queens*: The approval of this action would be one of the most pernicious steps this Society can take. It is true that in the wording of a Basic Science Law there is no implicit approval of any cult, but the connotation of the word is often more important than the denotation, and by permitting these people to prepare for an examination in schools that are not recognized we are opening the door wide. I wonder how many of you gentlemen know that in the Los Angeles County Hospital the surgical service is divided into regular surgery and osteopathic surgery, and that the gynecologic service is divided somewhat in the same fashion; the same is true of the dermatologic service, and so on; and we can see the day when in our county hospitals in this State we will have chiropractic services.

We either believe that no one has a right to practice the healing art without adequate preparation or we don't believe that. Basic science knowledge is only one of many facets of the preparation for the practice of the healing art. We should not compromise. We absolutely must defeat this or the next day we will have chiropractors being especially groomed to pass these examinations. (Applause)

DR. JAMES F. ROONEY, *Albany*: I think that to adopt this measure would be one of the most reactionary thing do. I entirely stated by the lessness in relation to apparently overcoming many of our men associated with legislative enterprise in the last three or four years, and in my opinion has been largely due to laziness of mind. This Society has been able to defeat through its legislative representatives all attempts of the chiropractors to be licensed ever since 1914. Now, gentlemen, that was thirty years ago. We have had this fight year after year ever since. True, some of us are getting tired of the fight every year, but if we are going to stand on principle that fight must continue without any compromise. There has never been any compromise before. There should never be any compromise on the training of educated physicians.

Basic science will not dispose of the main evil of chiropractic today, because the moment that a basic science law is enacted the chiropractors will be enabled to put in the so-called grandfathers' clause: that every man who is now practicing and has been practicing in this State for three or five years will be licensed as a chiropractor without any examination.

Gentlemen, I have gone through the whole osteopathic fight. I know just exactly how, and when, and why the osteopaths were licensed in this State. They were licensed for one very good reason. The wife of the then Governor of this State, a man who afterwards became a justice of the Supreme Court of the United States, had some leg disability, and the osteopaths pulled her leg, so to speak. (Laughter) Apparently it was enjoyable, and perhaps effective, but by his pressure upon her leg and the most eminent in the State of New York the osteopaths were licensed.

What happened? A statement was made before that Committee that once they were licensed they enactment year after to cover practically the that has occurred.

A basic science law will not cure this evil. It has not cured it in California. It has not cured it in any of the fourteen states that have adopted it. I hope that this House will vote down this recommendation. (Applause)

DR. H. J. KNICKERBOCKER, *Ontario*: May I say that I introduced this resolution by request? (Laughter)

DR. ROONEY: I want to say in answer to Dr. Rooney's remarks, I want to say

as there are at present. Remember, the osteopaths have their own board.

Whether you like it or not, I feel, and the legislators that I have spoken to feel, that sooner or later the chiropractic bill is going to pass. We are not going to discuss here whether chiropractors should or should not be licensed to practice. We are here for a practical purpose, and, although I may be wrong, if you go on the premise that the chiropractors are going to be licensed sooner or later, because they are already licensed in forty-six states, then you are opening the door for chiro-

practors to be licensed without such preparation. If we have a basic science law, then, if the chiropractors are licensed at some future date, they will have to meet those basic science requirements. If you have chiropractors licensed now, they may not have to meet any basic science requirements.

Let me cite Minnesota. Minnesota had 650-odd chiropractors in 1927, when the Basic Science Law was enacted. Since that time, since 1927, only 61 chiropractors have been able to pass that examination. Of course you would say that is 61 too many, but the number has gradually been going down. It shows there are fewer, and if they keep on it will have been, in fifteen or twenty years the problem in Minnesota will have vanished.

If we enact a basic Legislature sees fit to on, a basic science law would not only the of chiropractors, but it would at least give the groundwork for any chiropractor to come in and take this examination, and if a chiropractor has to study to 1 of years I and go on Let us out of the now, so that anyone who wants to practice the healing art in New York State at least must have those basic requirements.

DR. STEPHEN H. CURTIS, *Rensselaer*: Can I ask the privilege of the floor for Dr. Hannon, who is the Secretary of the Medical Examining Board? He can explain this, I think, better than most of us.

SPEAKER BAUER: Is the House willing to grant the privilege of the floor to Dr. Hannon?

DR. HARRY ARANOW, *Bronx*: I so move. SPEAKER BAUER: If there is no objection, we will be glad to hear from him. (Applause)

DR. ROBERT R. HANNON: May I first remark that I am not here as a representative of the Department of Education, and anything I say does not represent the views of the Department necessarily. They are my personal views.

I have watched with great interest the basic science laws in other states, and have considered the problem in New York State both from the standpoint of enforcement of our laws and breaking up illegal practice and also in regard to the practice of cults that are not recognized under the present New York law.

I do not believe that the answer to your problem is a basic science law. Our whole purpose is the protection of the public. You, as a Society, are interested in that protection of the public. You have in the past held to standards which you thought were a protection to the public in anything that pertained to the treatment of disease or physical conditions in members of the population of the State. I do not believe that you want to go on record now as being willing to lower your standards, as you will if you set up approval of any of these things or if you go on record as approving of these measures. Then you are approving a standard which I think does not meet your ideas of the protection of the public, and which certainly is not equivalent to our present standards.

The idea of a basic science law has been pre-

sented in many states and passed in many states more as a stopgap method of legislation, as an attempt to solve their problems. From my information from many states they are very often sorry that they adopted such a measure after they have done so.

It would depend, of course, in all these things, on the type of law that is put through. If you think that you will put through a law under which a group of physicians are going to examine everybody that is going to practice the healing art, I think you are anticipating too much. In the majority of states the examining boards are made up of nonmedical men. They are in some states made up even of only three persons, usually not M.D.'s

Such an examination not only sets the basis for licensure by the subsequent boards in whatever field it is, such as the person who passes that basic science examination then must take the licensing examination of his particular group, but it opens up the field right then and there to every cult that cares to come into practice. Your chiropractors will then have an examining board from which they will take the candidates from the basic science examination. Your nephropaths, your naturopaths, and so on, will each have their own examining boards. That has been the story in most states where the basic science law has been adopted. If you look at the statistics from a certain angle, it is true that the number of chiropractors that are practicing in some of those states has been reduced since they have had their basic science law, but that has been essentially because the chiropractors themselves have failed them in their board rather than that they have failed in the basic science examination to a great extent. It is because it becomes a closed corporation, more or less, after they get a certain number licensed. Then it becomes very difficult for additional ones.

We have that situation at the present time in physiotherapy. We have a license examination for physiotherapists, but the standards are such that nobody has been able to meet those requirements, and there has not been a person in the physiotherapy examination for six or eight years, because no one met the requirements; nevertheless, we have quite a few thousand physiotherapists, technicians who are going on and practicing in doctor's offices, institutions, and so on. It has not stopped people from going into the field of physiotherapy in New York State, even though we have only 300 licensed physiotherapists, approximately.

A matter of concern also to physicians is that when you set up a basic science board that board will be separate from your Board of Medical Examiners. A physician then transferring to another state will have more difficulty in transferring. We have, as you heard, in Minnesota a basic science board. The basic science board in Michigan will not recognize that board. Therefore, although a physician is qualified under the Minnesota medical licensing examination, he cannot get a license in Michigan until the Michigan basic science board will pass him, before he can be qualified even to take the examination or get an endorsement, which adds more difficulty to physicians transferring from state to state. Sometimes these boards become antagonistic to each other in various states, when it becomes quite a problem.

Gentlemen, I do not think the answer to your problem in this case is a basic science law. I feel that when you set up such a board then you open the way for every cult and every group to start hav-

ing pressure exerted to have an examiner on that basic science board take care of their people. (Applause)

... At this point Secretary Irving entered the room, and the delegates arose and applauded. ....

SPEAKER BAUER: We will interrupt the proceedings long enough for you to welcome our Secretary, whom we missed yesterday. We are glad he has recovered, and if I may speak allegorically we are glad his troubles are behind him. (Laughter)

Is there any further discussion?

DR. ARTHUR S. BROGA, *Madison*: When I was put on this Reference Committee I felt rather sorry for my colleague, Dr. Carroll. When he had to come in with this report, he rather expected tomatoes to be thrown at his head. Well, I have not so much hair on mine, so I would as soon have them thrown at me. Perhaps I had better explain why I put my name or signature to this report. I suppose all of us who affixed our John Hancocks to it had a lot of nerve, and we ought to have our pictures taken at least.

I gave this subject a good deal of consideration before I voted as I did. I have read all the reports on the subject that I could put my hands on. I have listened to Dr. Gullo and various members pro and con for a long time. Some of our own delegation are opposed to this measure, and some are for it, but as far as I am concerned the proof of the pudding is in the eating. I am meeting chiropractors up and down Main Street every day of the week and all over the rest of the town. The chiropractors are doing everything from seeing that my patients have their periods of time to that they get rid of so-called cancer of the stomach. For six years we have tried to put through a basic science law. For six years the law has been turned down. For six years the chiropractors have increased. Well, what are we going to do about it?

This basic science resolution does not give chiropractors a license. It is merely another hurdle. We have put a hurdle in by way of the primary school; we have put in the requirement of the grade school; we have put in the requirement of the high school; and we have put in the hurdle of the college. Now let us put in one more little hurdle, so that these gentlemen that go through high school and take a correspondence course from some school or other some place won't be able to set themselves up as chiropractors in this State.

Let me repeat again that this does not license the chiropractor; it merely puts in another hurdle. Eighteen states have passed basic science laws. In most of these states the chiropractors have decreased in number ever since. Therefore, that is why I voted for the resolution, and if anybody wants to throw any tomatoes at me I will be off the platform in a minute.

... The question was called for, and the motion was put to a vote, and was defeated. ....

SPEAKER BAUER: The recommendation of the Reference Committee, calling for the approval of the resolution, has been defeated.

*Section 81. (See 13, 76)*

**Report of Reference Committee on Constitution and Bylaws Amendments—Travel Expenses of Delegates to A.M.A.**

DR. FREDERIC W. HOLCOMB, *Ulster*: In regard to the proposed amendment to the Bylaws, Chapter X, Section 1, as changed by the suggestions of Dr. Rooney and Dr. Bedell, it will now read as follows:

"The Delegates to the American Medical As-

sociation who have attended each session of the House of Delegates of that Association, as certified by the Secretary of the American Medical Association to the Secretary of the Medical Society of the State of New York, shall be allowed traveling expenses."

I move the adoption of this amendment.

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried.

### Section 82 (See 30, 43)

#### Lifting Resolution from the Table Regarding Enforcement of Medical Practice Act

**SPEAKER BAUER** Gentlemen, we have one resolution which was tabled until after the disposal of the Legislative Committee's report and the Reference Committee's report on the Basic Science Law.

**CHORUS** What resolution was that?

**SPEAKER BAUER** It was introduced by Dr. E. L. He Burdell, of Westchester County Medical Society, relative to the enforcement of the Medical Practice Act, the "resolved" clause of which reads

"Resolved, by the House of Delegates of the Medical Society of the State of New York that it be recommended to the Governor and the Legislature of the State of New York that the Medical Practice Act be more rigidly enforced in the interest of the health and welfare of the citizens of this State."

Then Dr. Werne moved an amendment that the services of our legal counsel be offered to the Governor. Dr. McCarty then moved a substitute motion that there be drawn up a proper chiropractic bill which would have our approval and would not lower standards. Then the matter was postponed until after these reports were disposed of. We should like to get this out of the way before proceeding with the other business. We have the original resolution as amended by the Reference Committee, then the amendment of Dr. Werne suggesting the services of our legal counsel be offered to the Governor.

**VOICE** Dr. McCarty's amendment has already been taken care of.

**SPEAKER BAUER** Yes. We will take up Dr. Werne's amendment first, which is that we offer the Governor our legal counsel.

**DR. JACOB WERNL** *Queens* Just one word in favor of that amendment. We have been passing resolutions to stop illegal practice, and if we don't indicate a path by which this enforcement may be accomplished we have not accomplished our purpose. The mechanism by which it will be accomplished or the amount of work involved I don't know, but I believe this Society should certainly offer the services of the legal counsel to the proper authorities, advising them how this law may be enforced.

**DR. JAMES F. ROONEY** *Albany* I hope that this amendment will not prevail. Our legal counsel has enough to do. His work is increasing all the time. We have already had two or three resolutions introduced here under one of which he will be obliged to go over all of the literature to be put out by certain of the committees as to their legal content, and what not.

There is no reason why this State Society should gratuitously say to the Governor "We are very glad indeed to have our legal counsel advise you. It is bringing coals to Newcastle. He has legal advisers of his own choice. In addition it would mean this—that any State action that were taken

on his recommendation would of necessity involve this Society because our Counsel would be tied to him. I hope it will not prevail.

**DR. WERNL** I withdraw the amendment.

**SPEAKER BAUER** Is there any objection to Dr. Werne's withdrawing the amendment?

There was no dissent expressed.

**SPEAKER BAUER** Hearing none the amendment is withdrawn.

Perhaps we should take some specific action on the substitute motion of Dr. McCarty that a proper chiropractic bill be drawn up.

**DR. ROONEY** I move it be disapproved.

**SPEAKER BAUER** That is not a proper motion. The thing to do is to vote the substitute motion down if you want to disapprove of it.

**DR. ROONEY** I move that it lie on the table.

**CHORUS** No.

The motion was seconded, and it was put to a vote, and was declared lost.

**SPEAKER BAUER** The motion to table is lost. The question now is on the adoption of Dr. McCarty's substitute motion. All those in favor of the substitute motion will say "Aye."

**DR. ARTHUR J. BEDDLE** *Albany* Before the question is finally put, I would like to have it read once more.

**SPEAKER BAUER** I have not the text of his motion noted down here, but as I recall it—and Dr. McCarty, correct me if I am wrong—the Legislative Committee was to draw up a chiropractic bill which the Medical Society could support, and which would not lower our present medical standards.

The question was called for and the substitute motion was declared lost.

**SPEAKER BAUER** You have now before you the original motion of the Reference Committee, which is that it be recommended to the Governor and the Legislature of the State of New York that the Medical Practice Act be more rigidly enforced, in the interest of the health and welfare of the citizens of this state.

The question was called for, and the motion was put to a vote and was adopted.

**SPEAKER BAUER** The motion is carried, and the resolution is adopted, as modified by the Reference Committee.

### Section 83

#### Announcements

**SPEAKER BAUER** The Council and the Board of Trustees will meet immediately after the general meeting this afternoon in Room 1321-A. That will be at approximately 4:30, I imagine.

Please be back here at 1:00 o'clock, and if you can get here a little earlier, do so, because to avoid a roll call we are going to have you checked in as we did last year and then checked as you vote. The first order of business this afternoon will be the elections.

### Section 84 (See 68)

#### Report of Reference Committee on New Business C—Publicity

**DR. J. STANLEY KENNEY** *New York* This resolution was introduced by Dr. Knickerbocker, of Ontario County, relative to publicity. I have consulted with him and with the Director of the Public Relations Bureau and in the interests of saving time I am going to read the resolution as it has been modified by your Reference Committee, with their

consent. This is the resolution in its amended form:

"WHEREAS, the practice of medicine is now, and in the future is likely to, in a greater degree, become a political football, to the detriment of the profession as a whole; and

"WHEREAS, a coordinated, uniform policy involving active participation of the county societies, to the limit of their abilities, to reach the public, within their individual areas, is highly desirable; and

"WHEREAS, the individual citizen is the final deciding factor and should be able to cast his vote with a reasonable degree of intelligence based on all information available; therefore be it

"Resolved, that a program aimed at reaching the public individually, in so far as possible, be instituted; and furthermore be it

"Resolved, that the responsibility for effective publication and/or distribution within its jurisdiction of the same shall be the duty and responsibility of each county society; and be it still further

"Resolved, that all expense incident to distributing effective publicity of such programs as shall be initiated by the State be paid by the State Society; and be it still further

"Resolved, that the trustees be requested to increase the appropriation for the Publicity Bureau to the extent necessary to meet additional demands for publicity that may be foreseen during the rest of the year 1944."

We recommend the adoption of the resolution in its amended form.

.... The motion was seconded. ....

SPEAKER BAUER: You have before you the recommendation of the Reference Committee approving the resolution as amended. Is there any discussion?

DR. ARTHUR J. BEDELL, *Albany*: I should like to vote against it, and ask your serious consideration of it. Do you think you are getting your money's worth out of the great sums spent on the publications that you receive, and are you prepared to spend more money for a similar purpose? Personally, I am not.

SPEAKER BAUER: Is there any further discussion?

DR. H. J. KNICKERBOCKER, *Ontario*: As I understand it, this resolution does not compel any appropriation. It simply asks for one, if necessary. The object of this resolution is to encourage the county societies to become more active in propaganda work. It was originally brought up in our county medical society that we were to take it up individually as a county medical society to counteract the Wagner bill. The Wagner bill apparently is not going to get anywhere this year, but there is going to be another one introduced next year. This resolution also can be used effectively to help sell your medical expense insurance. The individual voter is the one who will in the end determine what legislation you have, and if we do not stand in with the individual voter and the powers that be in our own localities, there is no chance, or mighty small chance, of our getting anywhere.

DR. JAMES F. ROONEY, *Albany*: I will propose an amendment to the report of the Reference Committee to the effect that the entire proposal of the approved resolution shall be referred to the Council, to be utilized at the discretion of the Council.

SPEAKER BAUER: Your motion is really to commit it to the Council rather than to amend it?

DR. ROONEY: Yes.

.... The motion was seconded, and as there was no discussion, it was put to a vote, and was carried. ...

SPEAKER BAUER: The resolution is committed to the Council.

### Section 85. (See 68)

#### Report of Reference Committee on New Business C—Change in Compensation Law

DR. J. STANLEY KENNEY, *New York*: Concerning the resolution introduced by Dr. Thomas M. D'Angelo, of Queens, concerning changes in the Compensation Law:

"WHEREAS, at the recent session of the Legislature of this State, the Workmen's Compensation Act was amended in such a manner as to divide the State of New York in this matter into two distinct portions, (1) the counties of New York, Kings, Bronx, and Queens, and (2) the remainder of the State; and

"WHEREAS, this change removes from the four metropolitan counties the power to rate physicians for compensation practice, approve and license compensation clinics, arbitrate disputed medical bills, and investigate and try physicians for certain violations of the Compensation Law; be it therefore

"Resolved, that the Medical Society of the State of New York petition the next Legislature and have legislation introduced to return to the four county medical societies those powers that were abrogated by the recent change in the Compensation Law."

Your Reference Committee is in complete accord with the purpose of this resolution and views with concern the division of the State of New York in the administration of workmen's compensation affairs as accomplished by the recently enacted legislation.

Since this Reference Committee's report has been embodied in the Reference Committee Report on Workmen's Compensation adopted by this House this morning. However, we feel that the importance of making every effort to regain the powers under the workmen's compensation laws that have been lost to the metropolitan New York counties should be urged and that this resolution should be sustained. We, therefore, recommend its approval and adoption.

.... The motion was seconded. ....

DR. JAMES F. ROONEY: I make a similar motion in respect to that resolution—namely, that it be committed to the Council.

.... The motion was seconded. ....

DR. JACOB WERNE, *Queens*: I don't think there is any question in the mind of any delegate here that a great injustice has been done to the metropolitan counties. If we feel that way, we should give the public evidence of our feeling and urge the action taken by Dr. Kenney. I am opposing the motion to commit it to the Council.

DR. ROONEY: I quite agree with you, but I think that continuing action will be secured by referring this matter as directed to the Council, which is the continuing House of Delegates, rather than to have it lie in a subcommittee until the next meeting of the House. That is my reason for referring it to the Council, so that action may be initiated immediately, and there may be the proper follow-through on it. I still hold to my motion.

.... The question was called, and the motion was



put to a vote, and the resolution was committed to the Council.

**SPEAKER BAUER** Does anyone else have a resolution to present?

There was no response.  
**SPEAKER BAUER** If not, we will stand in recess until 1 00 o'clock. Please be prompt.  
 The session recessed at 12 00 noon.

## Afternoon Session

Tuesday, May 9, 1941

The session convened at 1 00 P M

**SPEAKER BAUER** The House will be in order

### Section 86

#### Elections

**SPEAKER BAUER** The first order of business is the election of officers

#### TELLERS

**SPEAKER BAUER** The Chairman will appoint the following fifteen men as tellers

Charles F. McCarty, *Kings*, Chairman  
 Frederick W. Williams, *Bronx*  
 Wendell R. Ames, *Broome*  
 Harold F. R. Brown, *Erie*  
 Dominick F. Aloisio, *Herkimer*  
 Robert F. Barber, *Kings*  
 Charles Gullo, *Livingston*  
 Francis N. Kimball, *New York*  
 Edward C. Veprovsky, *Queens*  
 Laurence D. Redway, *Westchester*  
 Paul M. Wood, *New York* (Section on Anesthesia)  
 Joseph P. Henry, *Monroe*  
 Samuel M. Kaufman, *New York*  
 William F. Fyaz, *Oswego*  
 Mahlon C. Halleck, *Orlago*

They will report to Dr. McCarty, Chairman of the Board of Tellers

#### NOMINATIONS AND ROLL CALL

Nominations were then called for and received.  
 The Assistant Secretary called the roll and the following were accounted for

#### COUNTY SOCIETIES DELEGATES

<i>Albany</i>	<i>Chemung</i>
Stanley E. Alderson	Clifford F. Leet
James S. Lyons	<i>Chenango</i>
Jacob L. Lochner Jr.	Archibald K. Benedict
<i>Allegany</i>	<i>Clinton</i>
Lyman C. Lewis	Leo F. Schiff
<i>Bronx</i>	<i>Columbia</i>
J. Lewis Amster	John L. Edwards
Edward P. Flood	<i>Delaware</i>
Louis A. Friedman	Robert Brittain
Vincent S. Hayward	<i>Dutchess</i>
William Klein	Aaron Sobel
Emil Koffler	Scott Lord Smith
Moses H. Krakow	<i>Erie</i>
Frederick W. Williams	John C. Brady
<i>Broome</i>	Harold F. R. Brown
Victor W. Bergstrom	John T. Donovan
Harry I. Johnston	Albert A. Gartner
<i>Cattaraugus</i>	Thurber LeWin
Wendell R. Ames	Alfred H. Noehren
<i>Cayuga</i>	Joseph C. G. Gorman
Harry S. Bull	Nelson W. Strohm
<i>Chautauque</i>	<i>Hamilton</i>
Ldgar Dieber	Joseph A. Geis
Walter G. Hayward	

<i>Franklin</i>	Samuel M. Kaufman
Charles C. Trembley	J. Stanley Kenney
<i>Fulton</i>	Francis N. Kimball
Sylvester C. Clemens	Madge C. L. McGuinness
<i>Genesee</i>	Wendell Mitchell
Peter J. DiNatale	Rudolph D. Moffett
<i>Greene</i>	Peter M. Murray
Kenneth F. Bott	Maurence C. O'Shea
<i>Herkimer</i>	Nathan Ratner
Dominick F. Aloisio	William B. Rawls
<i>Jefferson</i>	Ada C. Reid
Charles A. Prudhon	Beverly C. Smith
<i>Kings</i>	<i>Niagara</i>
Charles A. Anderson	William A. Peart
Albert F. R. Andersen	Guy S. Philbrick
Robert F. Barber	<i>Oneida</i>
Benjamin M. Bernstein	James B. Lawler
Louis Berger	Oswald J. McKendree
Frederic L. Elliott	Dan Melien
Maurice J. Dattelbaum	<i>Oranget</i>
John J. Gainer	John J. Buettner
Thurman B. Givan	William W. Street
Ldwia A. Griffin	Frederick S. Wetherell
Abraham Koplowitz	<i>Ontario</i>
Ralph I. Lloyd	Horner J. Knickerbocker
John J. Masterson	<i>Orange</i>
Harvey B. Matthews	Theodore W. Neumann
Daniel A. McAttee	Moses A. Stivers
Charles F. McCarty	<i>Orleans</i>
Donald L. McKenna	John Dugan
Abraham H. Kantrowitz	<i>Oswego</i>
Irving J. Sands	William F. Fyaz
Leo S. Schwartz	<i>Otsego</i>
Irwin L. Sans	Mahlon C. Halleck
Joseph Tenopir	<i>Pulnam</i>
Thomas B. Wood	Henry W. Miller
<i>Lewis</i>	<i>Queens</i>
Ldgar O. Boggs	Thomas M. D'Angelo
<i>Livingston</i>	W. Guernsey Frey, Jr.
Charles Gullo	Frank J. Cerniglia
<i>Madison</i>	Jacob Werns
Arthur S. Broga	Edward C. Veprovsky
<i>Monroe</i>	Ezra A. Wolff
Joseph P. Henry	<i>Rensselaer</i>
Charles S. Lakeunan	John D. Carroll
Leo F. Simpson	Alson J. Hull
John J. Keigan	<i>Richmond</i>
Warren Wooden	Milton S. Lloyd
<i>Montgomery</i>	Walter T. Heidmann
Robert C. Simpson	<i>Rockland</i>
<i>Nassau</i>	Stephen R. Monteith
Eugene H. Coon	<i>St. Lawrence</i>
Louis A. Van Kleeck	William G. Cooper
<i>New York</i>	John A. Pritchard
Harace E. Ayers	<i>Saratoga</i>
Ralph L. Barrett	John R. MacKilroy
Emily D. Barringer	<i>Schenectady</i>
Fenwick Beekman	Joseph H. Cornell
Lian J. Boyd	Charles F. Kourke
Albert A. Cnelli	<i>Schoharie</i>
Harold B. Davidson	David W. Beard
B. Wallace Hamilton	
Alfred W. Hellman	
Roy D. Henline	
David J. Kalaski	

<i>Seneca</i>	<i>Warren</i>
Roy E. Wallace	Morris Maslon
<i>Steuben</i>	<i>Washington</i>
Leon M. Kysor	Denver M. Vickers
Herbert B. Smith	<i>Wayne</i>
<i>Suffolk</i>	Ralph Sheldon
John L. Sengstack	<i>Westchester</i>
<i>Sullivan</i>	Andrew A. Eggston
Benjamin Abramowitz	Reginald A. Higgons
<i>Tioga</i>	C. J. F. Parsons
John B. Schamel	Laurance D. Redway
<i>Tompkins</i>	E. Leslie Burwell
Leo P. Larkin	<i>Wyoming</i>
<i>Ulster</i>	Henry S. Martin
Frederic W. Holcomb	<i>Yates</i>
	Bernard S. Strait

## DISTRICT DELEGATES

Francis G. Riley	Stephen H. Curtis
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## SECTION DELEGATES

Paul M. Wood	Roscoe D. Severance
Stockton Kimball	William J. Orr
Noble R. Chambers	Burdge P. MacLean
Abner I. Weisman	J. Sydney Ritter

## OFFICERS

Thomas A. McGoldrick	Kirby Dwight
Herbert H. Bauckus	James R. Reuling, Jr.
Norman S. Moore	Louis H. Bauer
Peter Irving	William Hale
Edward C. Podvin	George W. Cottis

## COUNCILORS

Floyd S. Winslow	John L. Bauer
Clarence G. Bandler	F. Leslie Sullivan
Harry Aranow	Carlton E. Wertz
Oliver W. H. Mitchell	Ralph T. Todd
	Charles M. Allaben

## TRUSTEES

William H. Ross	George W. Kosmak
Thomas M. Brennan	James F. Rooney
	Edward R. Cunniffe

## EX-PRESIDENTS

Martin B. Tinker	William D. Johnson
J. Richard Kevin	Chas. Gordon Heyd
Nathan B. Van Etten	Arthur J. Bedell
	James M. Flynn

## ELECTION OF OFFICERS, TRUSTEES, AND COUNCILORS

The following officers were elected:

President, Herbert H. Bauckus, *Buffalo*  
 President-Elect and  
 First Vice-President, Edward R. Cunniffe, *Bronx*  
 Second Vice-President, Scott Lord Smith, *Poughkeepsie*  
 Secretary, Peter Irving, *New York*  
 Assistant Secretary, Edward C. Podvin, *Bronx*  
 Treasurer, Kirby Dwight, *New York*  
 Assistant Treasurer, James R. Reuling, Jr., *Bayside*  
 Speaker, Louis H. Bauer, *Hempstead*  
 Vice-Speaker, William Hale, *Utica*

The following trustee was elected for a five-year term ending 1949:

William H. Ross, *Brentwood*

The following trustee was elected for a four-year term ending 1948; replacing Dr. Cunniffe, resigned:

Albert A. Gartner, *Buffalo*

The following Councilors were elected for a three-year term ending 1947:

Harry Aranow, *Bronx*  
 J. Stanley Kenney, *New York*  
 Floyd S. Winslow, *Rochester*

## ELECTION OF A.M.A. DELEGATES

The following were elected 1945-1946 delegates: Walter P. Anderton, *New York*; Albert F. R. Andresen, *Brooklyn*; Herbert H. Bauckus, *Buffalo*; Thomas M. Brennan, *Brooklyn*; Albert A. Gartner, *Buffalo*; William A. Krieger, *Poughkeepsie*; Oliver W. H. Mitchell, *Syracuse*; Edward C. Podvin, *Bronx*; James R. Reuling, Jr., *Bayside*; Floyd S. Winslow, *Rochester*.

The following were elected 1945-1946 alternate delegates: Clarence G. Bandler, *New York*; Emily D. Barringer, *New York*; Eugene H. Coon, *Hempstead*; Stephen H. Curtis, *Troy*; Andrew A. Eggston, *New York*; W. Guernsey Frey, Jr., *Forest Hills Gardens*; B. Wallace Hamilton, *New York*; Alfred M. Hellman, *New York*; Ralph Sheldon, *Lyons*; Denver M. Vickers, *Middletown*.

## ELECTION OF RETIRED MEMBERS

The following members were elected to Retired Membership:

Maurice C. Ashley, *Wappingers Falls*  
 Oliver L. Austin, *Tuckahoe*  
 Lemuel D. Ayers, *New Rochelle*  
 Amos T. Baker, *Briarcliff Manor*  
 Hiram R. Barringer, *Bay Shore*  
 John S. Black, *Scarsdale*  
 Gustave Brown, *New York*  
 George A. Clark, *Brooklyn*  
 Lewis G. Cole, *White Plains*  
 William L. Culbert, *New York*  
 John J. Davis, *Ozone Park*  
 Hughes Dayton, *Irrington*  
 T. Frederick Doescher, *Albany*  
 Alexander Goldman, *Bronx*  
 Charles Goodman, *New York*  
 Lawrence G. Hanley, *Buffalo*  
 Emilio L. Hergert, *Brooklyn*  
 Fred S. Hoffman, *Buffalo*  
 LeRoy F. Hollis, *Lacona*  
 Max Huhner, *New York*  
 Nathaniel H. Ives, *Mount Vernon*  
 Ulysses S. Kann, *New York*  
 Jacob E. Kaufmann, *New York*  
 George L. Laporte, *New York*  
 John E. Leonard, *Harford Mills*  
 Michael M. Lucid, *Syracuse*  
 Frederick W. Manly, *Phoenix*  
 William W. Meiners, *Malverne*  
 Milton P. Messinger, *Oakfield*  
 James L. New, *Lake Mahopac*  
 Ellwood Oliver, *Pine Plains*  
 Byron S. Price, *Port Chester*  
 Norman W. Price, *Niagara Falls*  
 J. Hubley Schall, *Brooklyn*  
 Cornelius J. Seay, *Scarsdale*  
 Burton T. Simpson, *Buffalo*  
 Jacob Sobel, *New York*  
 Frederic E. Sondern, *New York*  
 William H. Steers, *Brooklyn*  
 Guy H. Turrell, *Smithtown Branch*  
 Herman C. Wahlig, *Sea Cliff*

Section 87. (See 40, 64)

## Report of Reference Committee on Report of Council—Part II: Maternal and Child Welfare

SPEAKER BAUER: Dr. Donovan, as Chairman of the Reference Committee on Report of the Council, Part II, Maternal and Child Welfare, started to give you his report, and most of it was postponed until after some matters were taken care of. He will now proceed with his report.

DR. JOHN T. DONOVAN, *Erie*: Today I should like to finish my full report first, and not have you vote on each section separately in the first instance. There are six sections—that is true—but they are bound together, so why not vote on them at the

end of the report, or we will be here until tomorrow morning?

SPEAKER BAUER We will try it out that way, and as for the Reference Committee real-

fully that the existing law, but the Reference Committee feels that the various portions of the report should receive careful consideration and discussion by the House of Delegates.

1 The requirement that payment be made directly to the physician or the hospital rendering service

We agree with the view of the Council that this money should be paid directly to the servicemen's wives, thereby eliminating a third party in the relationship of physician to patient, and also discrediting any factor which might tend toward socializing medicine

2 The provision of hospital care at the "ward cost per patient day" to be determined by a pre-arranged formula

We agree with the opinion of the Council Committee, but feel it should be the privilege of the patient to be allowed to pay more for better accommodations if she so desires

3 Provisions for remuneration of physicians We agree with the Council Committee that the remuneration is low

4 The plan provides for additional fees where the services of a qualified consultant are required, but makes no provision for recognizing the extra services of a qualified obstetrician or pediatrician where such physician has undertaken the basic maternity or sick infant care of a patient under the plan

the extra services rendered

5 Fees paid under the plan must be the only compensation received for the services authorized under the plan

We agree with the Council's Committee that in view of the failure to have the available funds paid directly as a cash allotment an alternative would be to allow the funds available to be paid directly to the physician or hospital as complete or partial payment for the services rendered, in accordance with the patient's own arrangements with the physician and hospital

6 Initial plan that care given preceding date of authorization of the formal application for care could not be paid for under the plan

Your Reference Committee agrees and endorses the opinion of the Council Committee and the State Commissioner of Health in their objections to these limitations on the procedure

Under "Matters Now Pending"

1 The initial plan of the Children's Bureau urges the importance of infant health supervision, but in so doing provides that it must be rendered through approved child health conferences or well-baby clinics where they exist and are available without a so-called "means test" Where such are not available such supervision can be given under the plan only by a pediatrician or a physician meeting special qualifications in this field

We agree with the Council Committee and the State Commissioner of Health, who were thoroughly in accord with the inclusion of provisions for health supervision. They felt that the regulations were impractical and unreasonable in that they did not permit the patient the choice of a child-health conference or a private physician, nor did they make a reasonable provision for the general practitioner, who may deliver the baby and take care of it while it is sick but not supervise it while it is well

2 The Children's Bureau has interpreted the appropriation as intended to cover all medical care required by the expectant mother throughout her pregnancy and for six weeks thereafter

We agree with the Council Committee and the State Commissioner of Health and believe that this policy is unreasonable and will be changed in favor of a fairer definition of the types and extent of illnesses which the physician is called upon to care for under the fee for complete maternity care

3 Criticism by the practicing physicians of the various forms and statements which the State Department of Health has required in the operation of this plan

Your Committee understands that improvement has been made along these lines and earnestly requests that it continue to do so

I move the adoption of this portion of the Committee's report

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

DR DONOVAN On the resolution presented by Dr Charles Gullo, of Livingston County, reading

"WHEREAS, the present Federal Emergency Maternity and Infant Care Program of the Children's Bureau is intolerable, as it violates the physician and patient relationship, therefore be it

Resolved, That the Society of the to the American Medical Association, that it request the government of the Children's Bureau of Washington to alter the

because of the fact that this has been taken care of in our main report, we recommend no action on this resolution. I so move you

The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried

3 report your Refer as its very keen ap Jeffrey, Jr., and the their indefatigable emen's wives and of New York State, that regardless of legislation or fees the medical profession will assume care men dren of service-

Yo... ever M. Vickers, Joseph A. Geis, Louis A. Van Kleeck, Harvey B. Matthews, and John T. Donovan, Chairman, moves the adoption of this report as a whole

The motion was seconded, and as there was

no discussion, it was put to a vote, and was unanimously carried. . . .

*Section 88. (See 63)*

**Report of Reference Committee on New Business B—Workmen's Compensation, Deductions from Bills**

DR. ANDREW A. EGGSTON, *Westchester*: On the resolution presented by Dr. Abraham Koplowitz, of Kings, reading:

"WHEREAS, the practice of deducting 5 per cent from compensation bills which are paid within thirty days violates all business principles; and

"WHEREAS, the payment of bills is purely a business procedure; and

"WHEREAS, the usual business practice is the deduction of 2 per cent for the payment of bills within a stipulated reasonable period of time; therefore be it

"Resolved, that the Medical Society of the State of New York be requested to arrange with the Industrial Commissioner of the State of New York that no deduction be made in the payment of bills for workmen's compensation cases,"

your Reference Committee, New Business B, approves of this resolution, and moves its adoption.

. . . . The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. . . .

*Section 89. (See 67)*

**Report of Reference Committee on New Business B—A Plan for Medical Care**

DR. ANDREW A. EGGSTON, *Westchester*: On the resolution introduced by Dr. Scott Lord Smith, of Dutchess County, reading:

"WHEREAS, the Medical Society of the County of Dutchess has approved in principle a plan to provide adequate medical care to that part of our population just above the line of indigency; and

"WHEREAS, the providing of medical care to this group is one of the vital problems of our day; and

"WHEREAS, the outline of this plan is attached to this resolution,"

(which I will not read at this time)

"Be it resolved, that the House of Delegates refer the Dutchess County Plan to an appropriate committee for further study,"

In reviewing the plan your Reference Committee finds it interesting and very comprehensive, and approves of the resolution. The Committee further recommends that the plan be referred to the Council of the Medical Society of the State of New York for further study.

Your Committee on New Business B moves the adoption of this resolution.

. . . . The motion was seconded, and as there was no discussion, it was put to a vote, and was unanimously carried. . . .

SPEAKER BAUER: Thank you, Dr. Eggston.

*Section 90*

**Presentation of Incoming President-Elect, Dr. Edward R. Cuniffe, to the House**

SPEAKER BAUER: One of the many pleasures of being the presiding officer is the fact that I have the

opportunity to be the first officially to congratulate the one who receives the honor of being elected President-Elect.

I note that the new President-Elect has just come into the House, and I will ask Dr. Van Etten to escort him to the platform.

. . . . Dr. Nathan B. Van Etten escorted Dr. Edward R. Cuniffe to the platform amid applause. .

SPEAKER BAUER: Gentlemen, your new President-Elect.

DR. CUNIFFE: Mr. Speaker and Members of the House of Delegates, I want to thank you very sincerely for electing me to this distinguished office of President-Elect, for I do consider it a great honor to be allowed the privilege of following in the footsteps of so many able men who have preceded me.

While I realize very well the dignity and the honor given this position, I am not at all unmindful of the responsibilities that go with it, and those responsibilities I will share with you, for I have in the past seen so many exhibitions of loyal, wise, intelligent co-operation from the members of this Society to their officers that I am led to believe they will not desert me.

If I can call upon you for help, because I know the wonderful material this Society contains, I am sure that I will not fail.

I am just reminded as I stand here that I feel a great deal like the story of Winston Churchill. When he was a boy in a public school in England, he won a prize for excellent work in one of his studies that he was pursuing.

He sent a letter to his mother apprising her of that fact, and she wrote back to him saying, "Winston, I am very glad to hear of your success. I know you don't deserve it, but try and live up to it." (Laughter)

I am very, very thankful of your confidence in electing me to this position and although I know I don't deserve it I will promise you that I will try to live up to it. (Applause)

*Section 91*

**Presentation of Incoming Second Vice-President, Dr. Scott Lord Smith, to the House**

SPEAKER BAUER: Dr. Sobel, will you present the new Second Vice-President to the House?

. . . . Dr. Aaron Sobel escorted Dr. Scott Lord Smith to the platform amid applause. . . .

SPEAKER BAUER: Gentlemen, your Second Vice-President!

DR. SMITH: Mr. Speaker and Members of the House, all I can say is that I appreciate very much the honor of being able to serve in what capacity I can, and particularly to participate in what must be the very interesting duties of conducting our very important Society in furthering the interest of Organized Medicine.

Thank you again! (Applause)

*Section 92*

**Report of Special Committee on Prize Essays**

SECRETARY IRVING: For the Committee on Special Prize Essays, Dr. Chas. Gordon Heyd has reported that two manuscripts were received, entitled (1) "Two-Time Charlie" and (2) "Sic Fatum Ordinum Est," for the Merritt H. Cash Prize; that both of these essays were considered by the independent reviewers as good papers but neither worthy of a special prize.

## Section 93

Postponement of Report of Subcommittee on Scientific Exhibit Awards of the Convention Committee

SECRETARY IRVING: For the Subcommittee on Scientific Exhibit Awards of the Convention Committee, Dr. Andresen has no report as yet to make, but it will be made and published in the JOURNAL in due course. (See June 15, 1914, issue, page 1326.)

Dr. Andresen asks the members of that Subcommittee who are present in the room to look him up after adjournment. The only two who are present are Dr. Walter G. Hayward, of Jamestown, and Dr. Nelson G. Russell, of Buffalo; Dr. Walter P. Anderton, of New York, is ill, as is Dr. William A. Groat, of Syracuse.

## Section 94

Vote of Thanks to Committees

SPEAKER BAUER: At this time the Chairman order for someone to reference Committees

Committee, and all the other Committees served to make this session a success.

Dr. CLARENCE G. BANDLER, New York: I so move.

SECRETARY IRVING: I second the motion.

SPEAKER BAUER: I am sure it requires no discussion, so I will put the vote. All in favor say "Aye," contrary, "No." It is unanimously carried.

## Section 95

Rising Vote of Thanks to the Speaker

Dr. DAN MELLEN, Oneida: I move that we give a rising vote of thanks to the Speaker for the work he has so ably done during this meeting of the House of Delegates.

... The motion was seconded, and was carried by the delegates arising and applauding. ...

SPEAKER BAUER: Thank you very much, gentlemen. I assure you it is always a pleasure to preside over this House. I have ever found it most cooperative in trying to make the work move along rapidly. I appreciate very much your new expression of confidence in me.

## Section 96

Suggestion to Use a Voting Machine in Future Years

At junty of New York, I should like to suggest that in future years a voting machine be used to count the ballots in this House. I hereby give notice of intention to amend the Bylaws to that effect.

SPEAKER BAUER: The notice will lie in the hands of the Secretary until next year.

Are there any other matters to come before this House?

... There was no response. ...

SPEAKER BAUER: All committees having reported, and there being no further business to come before this House, I declare the 138th Session of the House of Delegates of the Medical Society of the State of New York adjourned *sine die*.

(The session adjourned at 3:00 p.m.)

# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the departments of pharmacology and of medicine of Cornell University Medical College and New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the August 1 issue and will concern "The Management of the Diseases of the Thyroid: III. Circulatory Disturbances."

### Management of Disorders of the Thyroid: II. Myxedema

DR. EUGENE F. DuBois: In the classical case of myxedema the diagnosis is very easy, and the treatment is relatively simple, but not all of the cases are classical. We may have various degrees of this condition, and underneath the picture of myxedema there may be concealed co-existing diseases and complications of the myxedema itself. It is well to remember that there are varieties of myxedema. The large majority of cases are due primarily to the failure of the thyroid function, but recently attention has been called to cases that are really Simmonds's disease, failure of the anterior lobe of the pituitary, and resembling myxedema or accompanied by myxedema. Attention has also been called to cases with a coexisting Addison's disease or an Addison's disease that is giving similar symptoms, and to other polyglandular conditions that are associated with myxedema.

We are having, I think, increasing amounts of man-made myxedema, made by surgeons, in operations for Graves' disease, taking out a bit more thyroid than they should. The condition is easily treated. There are cases of myxedema from a little too much x-ray therapy, and myxedema deliberately produced to relieve symptoms of coronary disease. Perhaps we are not having as many of those now as we did a few years ago. Then there are the recent drugs of the thio-urea series, such as thiouracil, that reduce thyroid function, drugs that give promise of being useful in the treatment of hyperthyroidism, and that can cause transient myxedema when used in excessive amounts. Just how many cases we will have of myxedema or hypothyroidism produced by these new drugs remains to be seen.

We must not forget the complications that may be concealed in the picture of myxedema, some of which are of prime importance, such as arteriosclerosis, the myxedema heart, and coronary disease, either manifest or latent.

The whole medical profession and a very considerable portion of the lay population of this country are indebted to Dr. David Marine for

the work he has done in the prevention and treatment of diseases of the thyroid gland. We are particularly fortunate in having him here today to speak on the physiologic aspects of myxedema.

DR. DAVID MARINE: I appreciate the honor of participating in what Dr. Shorr calls "the myxedema hour." However, I have to make some reservations. All of you know that new facts are hard to find and we all know that old facts are not always easily interpreted; at least, we do not always interpret them alike. I frankly confess to shortcomings in both categories.

One can classify the cases of myxedema into three general clinical groups: first, infantile myxedema (sporadic and endemic cretinism); second, adult myxedema (Gull's disease); and, third, experimental myxedema (cachexia thyreopriva). Of course, some sporadic cretins technically belong in the last category. They are due to congenital absence or congenital defects of the thyroid anlage.

Everyone is agreed, I think, that in myxedema the major feature is loss of function of the thyroid gland; in its simplest form, cachexia thyreopriva. There are, however, marked differences in the response to thyroidectomy due to age, sex, and species.

I shall now take up the groups in order. In cretinism and Gull's disease, the thyroid undergoes a slow, progressive, specific type of atrophy which is quite distinct morphologically from the type which follows hypophysectomy. I am sorry to say that at the present we have no knowledge as to why the thyroid undergoes this change. It has always been very difficult for me to understand why a tissue as resistant and as viable as the thyroid should undergo atrophy from intrinsic causes alone. Infections may destroy the thyroid, but infections account for only a few cases of sporadic cretinism. Infection as we ordinarily understand the word will not account for this particular type of thyroid change.

I have a section of a goiterous thyroid from a cretin calf in which one can still see evidence of

active hyperplasia, which is characteristic of the early stage and presumably is due solely to stimulation by the thyrotropic hormone. In the end or fibrotic stage of the process in a human endemic cretin there are scattered shrunken thyroid follicles with markedly distorted cells—some large and hyperchromatic others highly degenerated. One also may find, along with this destruction of the thyroid gland cells, mitotic figures which indicate an attempt to regenerate in spite of the destruction. This we call exhaustion atrophy.

The same type of change occurs in Gull's disease. In such a section the thyroid lobule may be in a state of advanced atrophy but one can still recognize the lobules and the glandular elements of the follicles. The lymphocytic infiltration about the follicles probably is an inflammatory reaction to the degenerating gland cells. Under higher magnification one finds degenerating cells with distorted hyperchromatic nuclei, sometimes along with mitotic figures just as in endemic cretinism. In other words, one sees a progressive destruction of the thyroid cells alongside of attempts to regenerate.

In contrast with the changes which one sees in myxedema and endemic cretinism, there is another type of change. I have a section of the thyroid of a dog which lived about eight months following hypophysectomy. Here there is nothing more than an extreme degree of involution. The cells are just vegetating, inactive, because there is nothing to stimulate them. The injection of thyrotropic hormone converts these flat endothelial like cells into cuboidal or even columnar forms. Thus then, is the difference between the involution of the thyroid follicle that follows withdrawal of the thyrotropic hormone (hypophysectomy) and the atrophy of the thyroid as seen in myxedema and in cretinism. In the latter, involution occurs in spite of increased amounts of thyrotropic hormone, there is both anatomic and chemical evidence that the hypophysis is producing an increased amount of thyrotropic hormone, which may lead to exhaustion atrophy.

Sections obtained in the early work of Lenhart and myself in Cleveland left a strong impression upon us, particularly one from a puppy, one of a litter of four cretin puppies with large goiters. This experience emphasizes the strong regenerative stimulus present in these cases. The puppy was so weak we could not do a biopsy at first, so we gave the animal some iodine and took a section about five days later. Despite the iodine there was considerable high follicular epithelium. The thyroid follicles were widely scattered in a myxomatous stroma. In another section of the same thyroid lobe two weeks later, the myxoma-

tous stroma was shrinking, i.e., the water was being removed and the follicles were coming closer together. They looked much more like normal thyroid follicles. At six weeks, the same lobe was practically a normal thyroid, and I might add that the animal grew to be a normal adult dog.

I mentioned the similarity between the anatomic changes that one sees in endemic cretinism and myxedema (Gull's disease). There also appears to be a relationship between Graves' and Gull's disease. The importance of Graves' disease as a precursor of Gull's disease was emphasized in the report of the British Myxedema Commission of 1888. Virchow, prior to that, pointed out that almost certainly there was some fundamental connection between Graves' disease and myxedema, but we all know that the pendulum has swung several times since those days. Now we are back again to the view that there is some connection between these two, although superficially they appear to be opposite pathologic processes. Graves' disease and Gull's disease have a somewhat similar geographic distribution. The highest incidence of Gull's disease occurs in those areas of the world where Graves' disease is most common, that is, in those countries bordering on the Baltic and North Seas and in our own country. There are more myxedema cases reported from northwestern Europe than in any other part of the world. In the great goiter districts of the world we have the other form—endemic cretinism.

There is about the same sex incidence in Graves' disease and myxedema. Perhaps myxedema is relatively more frequent in the female than is Graves' disease, in the latter it is something like five to one, depending upon the age and the location, and in myxedema it is probably between five and ten to one.

In endemic cretinism it is difficult to find any figures on the sex ratio, although the four or five series that have been reported indicate that it is slightly more common in the male. If there is any significance in this it is in the opposite direction of what one sees in Gull's disease.

Experimentally it is extremely easy to produce cretinism (infantile myxedema) in all the commonly available mammals by thyroidectomy alone during their infancy, and it is very difficult to produce myxedema in those same animals during the stage of active sexual life. Also, there are species differences. Herbivorous animals withstand thyroidectomy very well and carnivorous animals withstand thyroidectomy much more poorly. Among adult animals one gets a higher percentage of myxedema in the cat and dog than in the rabbit or sheep. The same age difference, in a general way, has been noted in human ca-

chexia strumipriva. Cachexia strumipriva is much more common in the young. Practically all the cases reported are in patients between the ages of 10 and 25 years. Horsley suggested that this age limitation might be related to cessation of growth.

T. Kocher and the Reverdin brothers noted that not all of the patients who underwent apparently total thyroidectomies developed cachexia strumipriva. Doubtless incomplete thyroidectomy or the presence of accessory thyroids would explain most failures, but there has always been difficulty in closely correlating the amount of thyroid removed with the symptoms produced. Similar observations have been made in recent years by Thompson and Thompson and others in association with subtotal thyroidectomy in the treatment of Graves' disease. One sees not infrequently a transient or even permanent myxedema following this operation.

There is the question whether patients with Graves' disease are not more susceptible to the development of myxedema, and acquire this state following the removal of less thyroid gland than is necessary to cause myxedema in individuals that do not have Graves' disease. Such a result could be predicted because Graves' disease is a natural precursor of Gull's disease. The metabolic rate may be minus 30 with or without myxedema. This all goes to show that the production of myxedema depends on more factors than merely a diminution in the amount of thyroid hormone.

Cretinism occurs in the first four years of life and before much sexual development has taken place, while Gull's disease occurs almost entirely during the decline of sexual life—the decline of sexual life in the female being due to one of many things (x-ray, radium, surgery, postpregnancy). Gull's disease in the male also occurs during the decline of sexual life.

It looks as if some glandular interrelations may be involved in promoting or inhibiting the onset of myxedema, such as the thyroid-gonad, the thyroid-hypophysis-gonad, and the thyroid-adrenal. I won't go into these because my time is nearly up.

I might just mention a few experiences which indicate these glandular interrelations in myxedema. We studied the urinary excretion of androgens in three cases of Gull's disease. We used the capon comb growth-promoting test. We examined a seventy-two-hour specimen of urine, although in such work a thirty-day specimen is preferable. I do not want to make too much of this test, but if carefully done I think it is superior to the colorimetric methods now available. A woman aged 50 was diagnosed as having Gull's disease by several competent internists. The basal metabolic rate was minus 23 and the

total androgen excretion during the three-day period, in 6,800 cc. of urine, was 0.86 mg., calculated as androsterone. Desiccated thyroid was then given, and in the course of ten days the dose was brought up to a grain daily. After ninety-three days another three-day specimen of urine (6,690 cc.) showed a marked increase in androgen excretion. It rose to 4 mg. and the basal metabolic rate rose to plus 14. Fifty-six days later a third specimen of urine (5,570 cc.) showed an output of 3.5 mg.

Another patient, a man aged 54, was observed at Mt. Sinai Hospital through the courtesy of Dr. B. S. Oppenheimer. The total excretion of androgens, determined in a similar manner, was 1.1 mg. before treatment, which is definitely below normal. After forty-seven days of treatment with desiccated thyroid ( $\frac{1}{2}$  grain daily) there was a significant rise in androgen excretion to 3.26 mg. and the basal metabolic rate rose from minus 22 to minus 4. Three cases are not enough from which to draw conclusions and more cases must be studied to see if this rise in androgen excretion regularly occurs. Dr. Rosen was unable to demonstrate any change in the estrogen excretion.

Where do the androgens come from in postmenopausal women? They could come from the adrenal cortex. We know that the functions of the thyroid and adrenal cortex are interrelated. There are numerous cases in the literature suggesting that the feeding of thyroid increases androgen production and excretion. A recent case reported by McCullagh from the Cleveland Clinic is strongly suggestive. A man aged 50 came to the clinic complaining of sexual impotency. After treatment with testosterone propionate he promptly regained sexual potency, but his metabolic rate remained minus 32. Desiccated thyroid was then substituted for the testosterone. The result was that his metabolic rate returned to normal and the sexual potency was maintained. Androgen excretion studies were not made in this case.

In closing, I might state that we are nowhere near a solution of the myxedema problem in spite of the fact that, as Dr. Shorr will tell you, we have nearly a 100 per cent satisfactory therapy in Gull's disease; and, in my opinion, a complete solution of the problem of myxedema cannot be expected until we have much more exact knowledge of the various endocrine interrelations than we now possess.

DR. DuBois: Dr. Shorr will speak on the general medical treatment.

DR. EPHRAIM SHORR: The broad background that Dr. Marine has given us of the pathophysiology of myxedema permits me to simplify my discussion. His remarks also demonstrate how



the possession of a successful therapeutic agent tends to oversimplify our concept of a clinical syndrome. It is becoming obvious that a condition such as myxedema cannot be localized to the thyroid apparatus alone.

Before passing to the treatment of myxedema it might be worth while to dwell on the problems presented by its diagnosis. As a clinical syndrome its manifestations are generally so clear-cut that one might anticipate no difficulty in recognizing it. For that reason it is disquieting to see how long a period generally elapses between the development of symptoms and their recognition by the practitioner. I have before me the charts of 9 cases which have been followed in the Outpatient Department. The duration of symptoms prior to recognition was as follows: fifteen years, ten years, seven years, six years, five years, four years, three years, one year, and three months. This is altogether too long and points to some sources of confusion which contribute to this lag.

Analyses of these cases have brought out some of the more common causes for this delay. Cardiac symptoms have often predominated and have led the physician to regard the phenomena to be on a purely cardiovascular basis. The pallor common to this condition has frequently led to a diagnosis of anemia, too often uncorroborated by actual laboratory tests, and to its treatment on this basis. The edema and anemia have in other cases prompted the diagnosis of Bright's disease. These appear to comprise the most common incorrect diagnoses. I do not mean to imply that all cases of myxedema are classical in their symptomatology and laboratory findings. Difficulties in establishing a diagnosis are occasionally encountered, but well recognized and reliable methods are available which in combination offer extremely reliable diagnostic criteria.

On the clinical side, there are generalized edema, changes in the skin and hair, sensitivity to cold, impairment of mental alertness, gain of weight, bradycardia, and lowering of the voice. On the laboratory side, the lowered basal metabolic rate and the elevated blood cholesterol values are most commonly employed as criteria. Circulatory studies yield valuable information in the form of changes in the size of the heart and in the electrocardiogram, the slower circulation time, and diminished minute volume. We have recently called attention to the value of studies of creatin metabolism in adult myxedema. The untreated case of myxedema will present entirely normal values for spontaneous creatin and creatin tolerance. Following the administration of thyroid, a temporary creatinuria and impairment of creatin tolerance occurs, thus, the

development of these abnormal creatin values after small doses of thyroid, as little as 30 mg daily of desiccated thyroid, is proving an unusually sensitive indicator of the existence of myxedema. In children, where the picture is frequently atypical, the determination of the bone age is of great help. The determination of serum organic iodine here is proving a valuable index of myxedema and, although at the moment more of academic than practical interest, the level of excretion of thyroid stimulating hormone from the anterior pituitary is generally elevated.

Once the diagnosis is made we must deal with the problems presented by the choice of therapeutic agent, the mode of administration, and the therapeutic goal. These may be best discussed by using specific cases as examples.

The case I have chosen is that of myxedema in a woman of 26. Her marriage at 18 was followed by four pregnancies in rapid succession, each pregnancy resulting in more and more evidence of myxedema until it finally became permanent. On admission her physical appearance was typical of myxedema. The thyroid was palpable and slightly enlarged.

Her basal metabolic rate lay between minus 30 per cent and minus 35 per cent. Her blood cholesterol was 430 mg per cent. Her nitrogen output in the urine was low, reflecting the lowered protein metabolism of this condition. Her circulation time was 14.6 seconds and her cardiac output 1.26 liters per square meter per minute. The surface area of the heart was 160 square cm. The electrocardiogram showed low QRS complex, low T wave, and a PR interval of 0.54 seconds. There was heart block and regular idioventricular rhythm. Her weight was 80 kilograms.

In most cases of myxedema the thyroid histology is virtually that of total atrophy, so that no significant restoration of function can follow the administration of iodine. Replacement therapy with thyroid hormone must be employed. In this case, because of the thyroid enlargement, iodine was tried for a period of twenty days, to ascertain whether there was sufficient residual thyroid tissue which might undergo involution and elaborate enough thyroid hormone to abolish the myxedema. This did not take place and replacement therapy was obviously necessary.

Of the available thyroid preparations, standardized desiccated thyroid is generally agreed upon as the preparation of choice. Thyroxin by mouth is unreliable in its action and there are very few indications for its intravenous use. Indeed, except under unusual circumstances, thyroxin has no place in the general therapy of myxedema. The advantages of standardized desiccated thyroid are its uniform action by mouth,

chexia strumipriva. Cachexia strumipriva is much more common in the young. Practically all the cases reported are in patients between the ages of 10 and 25 years. Horsley suggested that this age limitation might be related to cessation of growth.

T. Kocher and the Reverdin brothers noted that not all of the patients who underwent apparently total thyroidectomies developed cachexia strumipriva. Doubtless incomplete thyroidectomy or the presence of accessory thyroids would explain most failures, but there has always been difficulty in closely correlating the amount of thyroid removed with the symptoms produced. Similar observations have been made in recent years by Thompson and Thompson and others in association with subtotal thyroidectomy in the treatment of Graves' disease. One sees not infrequently a transient or even permanent myxedema following this operation.

There is the question whether patients with Graves' disease are not more susceptible to the development of myxedema, and acquire this state following the removal of less thyroid gland than is necessary to cause myxedema in individuals that do not have Graves' disease. Such a result could be predicted because Graves' disease is a natural precursor of Gull's disease. The metabolic rate may be minus 30 with or without myxedema. This all goes to show that the production of myxedema depends on more factors than merely a diminution in the amount of thyroid hormone.

Cretinism occurs in the first four years of life and before much sexual development has taken place, while Gull's disease occurs almost entirely during the decline of sexual life—the decline of sexual life in the female being due to one of many things (x-ray, radium, surgery, postpregnancy). Gull's disease in the male also occurs during the decline of sexual life.

It looks as if some glandular interrelations may be involved in promoting or inhibiting the onset of myxedema, such as the thyroid-gonad, the thyroid-hypophysis-gonad, and the thyroid-adrenal. I won't go into these because my time is nearly up.

I might just mention a few experiences which indicate these glandular interrelations in myxedema. We studied the urinary excretion of androgens in three cases of Gull's disease. We used the capon comb growth-promoting test. We examined a seventy-two-hour specimen of urine, although in such work a thirty-day specimen is preferable. I do not want to make too much of this test, but if carefully done I think it is superior to the colorimetric methods now available. A woman aged 50 was diagnosed as having Gull's disease by several competent internists. The basal metabolic rate was minus 23 and the

total androgen excretion during the three-day period, in 6,800 cc. of urine, was 0.86 mg., calculated as androsterone. Desiccated thyroid was then given, and in the course of ten days the dose was brought up to a grain daily. After ninety-three days another three-day specimen of urine (6,690 cc.) showed a marked increase in androgen excretion. It rose to 4 mg. and the basal metabolic rate rose to plus 14. Fifty-six days later a third specimen of urine (5,570 cc.) showed an output of 3.5 mg.

Another patient, a man aged 54, was observed at Mt. Sinai Hospital through the courtesy of Dr. B. S. Oppenheimer. The total excretion of androgens, determined in a similar manner, was 1.1 mg. before treatment, which is definitely below normal. After forty-seven days of treatment with desiccated thyroid ( $\frac{1}{2}$  grain daily) there was a significant rise in androgen excretion to 3.26 mg. and the basal metabolic rate rose from minus 22 to minus 4. Three cases are not enough from which to draw conclusions and more cases must be studied to see if this rise in androgen excretion regularly occurs. Dr. Rosen was unable to demonstrate any change in the estrogen excretion.

Where do the androgens come from in postmenopausal women? They could come from the adrenal cortex. We know that the functions of the thyroid and adrenal cortex are interrelated. There are numerous cases in the literature suggesting that the feeding of thyroid increases androgen production and excretion. A recent case reported by McCullagh from the Cleveland Clinic is strongly suggestive. A man aged 50 came to the clinic complaining of sexual impotency. After treatment with testosterone propionate he promptly regained sexual potency, but his metabolic rate remained minus 32. Desiccated thyroid was then substituted for the testosterone. The result was that his metabolic rate returned to normal and the sexual potency was maintained. Androgen excretion studies were not made in this case.

In closing, I might state that we are nowhere near a solution of the myxedema problem in spite of the fact that, as Dr. Shorr will tell you, we have nearly a 100 per cent satisfactory therapy in Gull's disease; and, in my opinion, a complete solution of the problem of myxedema cannot be expected until we have much more exact knowledge of the various endocrine interrelations than we now possess.

DR. DuBois: Dr. Shorr will speak on the general medical treatment.

DR. EPHRAIM SHORR: The broad background that Dr. Marine has given us of the pathophysiology of myxedema permits me to simplify my discussion. His remarks also demonstrate how



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[Continued from page 1472]

As a rule, the amount of desiccated thyroid necessary for complete replacement in myxedema is relatively small. I have sampled at random a few of the patients who are being maintained at complete replacement levels to illustrate the usual range of dosage. These are the figures for the amount of desiccated thyroid taken daily: 180 mg., 150 mg., 120 mg., 120 mg., 120 mg., 90 mg., 90 mg., 75 mg., 60 mg., 60 mg., 60 mg. While it is a rule to which there must be an occasional exception, we have come to believe that whenever 180 mg. of desiccated thyroid given daily fail to relieve the signs and symptoms in a patient suspected of myxedema, some other cause must be suspected.

As regards postoperative myxedema and cretinism, the same diagnostic criteria and therapeutic regime should be employed as with Gull's disease. With the cretins, early diagnosis and treatment favor a restoration to normal well-being, but many residual defects may be anticipated.

DR. DuBois: Dr. Shorr, the doses mentioned refer to U.S.P. desiccated thyroid, do they not?

DR. SHORR: For the past twenty years we have used in this clinic one brand of thyroid preparation and have found it very uniform. It contains 0.2 per cent of iodine. In patients who have been carefully followed for four or five years it is quite amazing to see how constant its action is. I believe that everyone should work with one preparation to assure himself of its potency and get to know how to use it.

DR. DuBois: That is the lesson we learned in discussing digitalis. I think there has been a good deal of confusion in the literature of myxedema on account of the fact that some preparations of thyroid are very much weaker than the U.S.P. standard.

DR. HARRY GOLD: Would Dr. Shorr state why we don't use thyroxin more frequently, since it is a pure chemical?

DR. SHORR: Its action by mouth is much less regular, due to irregular absorption, contrasting with the regular effects obtained from the oral administration of desiccated thyroid. The necessity for intravenous medication is extremely rare.

DR. McKEEN CATTELL: Are the doses you employ sufficient to cover the theoretic total needs of thyroid hormone in completely deficient patients?

DR. SHORR: They are. The doses that I gave you will correct all the physiologic defects and bring about complete symptomatic relief. As I think Dr. Marine pointed out, you may see a few acini here and there which differ from those in normal glands in the absence of colloid, which in-

dicates that whatever is contributed by the gland must be slight. Would that be your feeling, Dr. Marine?

DR. MARINE: I would say that most patients with myxedema have some thyroid function, but it is negligible when they reach the state where the metabolic rate goes down to minus 30.

DR. SHORR: Should there be any uncertainty, I think it good practice to put such a patient on a course of iodine. If the symptoms and the physiologic abnormalities are not corrected, then it is certain that any residual function is negligible.

DR. MARINE: I might add that Osler has one of the best accounts of cretinism in America. He had a considerable number of patients treated with syrup of hydriodic acid alone and this remedy gave some relief of the symptoms and in several an increase in growth. One would have to infer from this that there was some thyroid present in clinical myxedema because in experimental animals we cannot get any effect from giving iodine if the animal has no thyroid tissue.

DR. DuBois: I might say that syrup of hydriodic acid is our favorite method of giving iodine on account of its relatively pleasant taste.

DR. GOLD: Do we recognize any hypothyroidism or myxedema with a normal basal metabolic rate? From time to time one encounters patients who have the clinical signs and symptoms of myxedema but turn out to have a normal metabolic rate.

DR. MARINE: That is a very difficult question.

I think that the metabolic rate does not depend on the thyroid alone. You can have a high rate after removal of much of the thyroid and there may be some thyroid insufficiency in relation to its influences on the function of other organs, not connected with the metabolic rate. We are getting into a theoretic question and we will have to leave it at that.

DR. GOLD: Is there any experience among the group here in the treatment of these cases?

DR. SHORR: Yes, I remember one such case. A woman in her thirties with a basal metabolic rate of about minus 5 had definite evidence of myxedema and on iodine showed no symptomatic change. Replacement therapy was instituted with considerable relief of symptoms. After about six months of such treatment, she ceased taking thyroid and has since been very well without replacement therapy. I think that fits in with Dr. Marine's conception of the picture of thyroid insufficiency with adequate metabolic rate but inadequate thyroid hormone formation for other functions.

DR. DuBois: I would like to add, though, a

[Continued on page 1476]

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[Continued from page 1474]

word of caution in the diagnosis of myxedema with normal metabolic rate. Of course, there is no one laboratory test that is diagnostic in all cases.

I might add a few words about the use of the basal metabolism in diagnosis and treatment. You must remember that a good many persons with metabolisms of minus 15 are within the normal range, and a few as low even as minus 20 are within the normal range. Statistically, however, the chances are that they are abnormal. You will see reports in the literature of large groups of cases with low metabolism, averaging around minus 20, that are labeled mild myxedema. Relatively few of these cases are reported from the clinics where they are making special studies of thyroid disease, relatively few from such places as Dr. Means' clinic in the Massachusetts General Hospital, or in the Mayo Clinic. A good many are reported by doctors who are enthusiastic over the results they obtain from thyroid medication. I think there are patients with myxedema in that range, and these usually have some of the classical symptoms of myxedema; they improve distinctly and satisfactorily with thyroid medication. However, there are a good many that are accused of having myxedema at that level but who do not have it. These are patients below par. They show fatigue. They are perhaps anemic. They tire easily. They have menstrual disturbances or sterility. Many of them improve with thyroid medication. Whether or not they have a real thyroid deficiency we are not quite sure, but undoubtedly the practitioner is labeling as having myxedema a great many patients who have never had it.

STUDENT: Does the dosage of thyroid vary with the activity of the individual? Would you use more thyroid material during periods of greatly increased exercise?

DR. DuBOIS: Would it be like insulin in that respect?

DR. SHORR: I do not think we have any methods sensitive enough to detect the small differences that might exist.

DR. JANET TRAVELL: Are there any other dangers connected with the use of thyroid in myxedema besides those which Dr. Shorr mentioned; that is, danger of precipitating myocardial failure or the anginal syndrome?

DR. SHORR: I might refer to the report by Means of two patients who, on thyroid replacement therapy, developed signs of acute adrenal insufficiency and had to be treated with large amounts of salt.

DR. DuBOIS: There is one more detail that Means brings out, the danger of the use of mor-

phine in myxedema. What should be the dosage of morphine in myxedema; none at all, or can you use it if it becomes necessary?

DR. SHORR: I would suggest its use with extreme caution.

STUDENT: Is the arteriosclerosis in typical hypothyroidism due to the thyroid disorder, or can it be explained by the age of the group?

DR. SHORR: The situation is too complex for us to be certain of the significance of arteriosclerotic changes. Long-standing myxedema occurring in the third decade, as in the patient I discussed, may be entirely free of arteriosclerotic changes.

DR. TRAVELL: If untoward results do not develop early in the course of treatment, are they apt to develop subsequently?

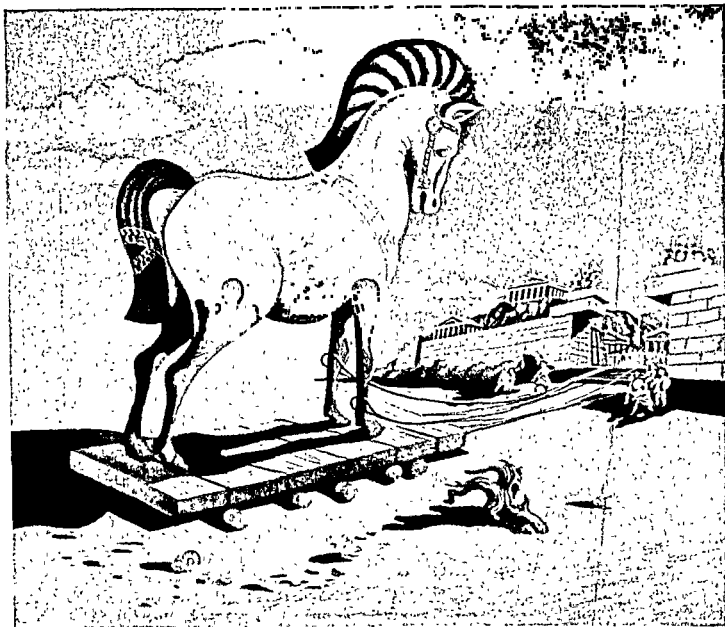
DR. SHORR: Yes. Cardiac symptoms may result from too sudden assumption of more work, quite apart from the existence of cardiovascular disease. There is, in addition, the patient in whom a greater cardiovascular load is imposed on a heart with coronary disease, and results in anginal symptoms.

DR. WALTER MODELL: I wonder whether there is an explanation for the tremendous resistance to the thyroid hormone which is exhibited by the patient with nephrosis to whom very large amounts of thyroxine have been administered intravenously without producing any appreciable effect.

DR. SHORR: There are undoubtedly great differences in sensitivity to thyroid exhibited by many normal individuals. We don't know the reason for the sensitivity of the patient with myxedema, and for the insensitivity of the normal individual and the patient with nephrosis.

DR. DuBOIS: I should like to say that the striking point brought out in regard to treatment is the need of great caution; that is, beginning it very gradually and watching the patient with extreme care. In planning the treatment of myxedema we should bear in mind the underlying pathologic physiology of the condition. Here is a person, usually a woman, who has been going around for months or perhaps years with a lowered metabolism; not only a lowered basal metabolism, although it is on the average 30 to 40 per cent below the standard, but also a lowered total metabolism. Such persons are not so active as most people. They try to keep quiet. As a result, the total metabolism has been lowered, and there has been a diminished demand on all of the functions of the body. The organs of the body have more or less adapted themselves to these lethargic conditions of the patient. When thyroxine was first discovered, they were tempted to use it dramatically in the treatment of myxedema, and even gave some cases the full therapeutic

[Continued on page 1478]



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[Continued from page 1478]

since gained a little weight. I saw her recently, about four years after the discovery of her myxedema, and she has gained possibly 10 pounds. She was a striking example of the thin myxedematous patient.

DR. DuBois: The classical patient with myxedema is said to have a gain in weight. Dr. William Plummer, of the Mayo Clinic, has made a careful analysis of the weights of his patients, 200 of them, and has found that the majority do show weights that are above the average, above the normal expectancy for height. About two-thirds of them have an increase in weight, but the average amount of edema in his patients is 13 pounds. If a patient has only gained 13 pounds in weight it does not mean anything added to the fat or muscles of the body. Thirty-eight per cent of his patients gave weights that were below the normal expectancy, and that means that they were below 13 pounds plus a loss in body tissues. By that I mean that if they were just at the normal weight, 13 pounds of edema was taking the place of 13 pounds of good normal tissue. In general, the severer cases were the ones that showed the loss in weight, and that points to an undernutrition of the whole body.

STUDENT: I should like to ask Dr. DuBois about the management of one of those patients with a minus 10 basic metabolic rate who does not have an obvious myxedema. Is there any indication for giving thyroid extract to such a person for a while? This is a person with fatigue and no obvious signs other than that.

DR. DuBois: A great many reports in the literature say they are getting excellent results, without any too much of a scientific background. There is a question as to what the thyroid medication is really doing. Just because they are going to the doctor they are paying more attention to their diet and they are being encouraged. Someone is taking an interest in their case. Their lives are better regulated. They are cheered up. There are a great many things besides the thyroid that go into that prescription.

DOCTOR: Is it conceivable that they might have a myxedema that is of lesser degree?

DR. DuBois: Yes, it is perfectly conceivable that their normal metabolism would be, say, plus 10, and they are running along 20 per cent lower than they should be. I think there are relatively few of those cases, and that the more careful the clinic the fewer you will find that are labeled myxedema. I don't see any harm, however, in trying thyroid medication for a short time.

DR. C. H. WHEELER: How about the case of the obese woman who is trying to reduce her weight and is found to have a basal metabolism

of minus 12 or 15, and who is given thyroid as an adjuvant to the dietary treatment? Is that to be recommended, do you think?

DR. DuBois: I think, if it is done very cautiously and carefully, thyroid is of use in obesity. It has to be watched. I don't think it should be a routine treatment.

DOCTOR: I should like to ask about the use of thyroid treatment in private practice where basal metabolism studies are not easily obtained; I mean practice that is not associated with clinics, large hospitals, and with poorer people. Is it feasible to carry people along with thyroid medication, using only clinical guides, after, let us say, an initial metabolism test?

DR. DuBois: It can be done by carefully watching the patient, using good clinical judgment. After all, you have to do that even if you do use basal metabolism tests. The final criterion is the condition of the patient and the judgment of the doctor. It can be done, and you have to do it.

DR. SHORR: Specificity of response is a very good indication of genuine myxedema because these patients respond very quickly, and in two or three weeks they are aware of a decided improvement in well-being. In borderline cases, however, and they are not uncommon—people who feel sluggish, who are tired and slow down toward the end of the day, and who frequently get a pickup in the afternoon if they have taken thyroid—I find myself unable to believe that the moderate improvement is very significant. The diagnosis in these cases is uncertain without laboratory data. Every patient with genuine myxedema develops a significant creatinuria after the administration of even a grain a day. There is always a fall in the cholesterol. With the cessation of treatment with thyroid in the true myxedematous patient there results a sharp rebound.

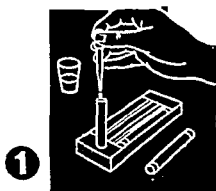
A great many workers feel that the rebound in cholesterol after cessation is even more significant than the change which occurs on administration of thyroid. The experience that we all have with people who feel better on thyroid, who get used to taking thyroid, who feel let down after stopping thyroid, and who can by every test be demonstrated not to have any thyroid insufficiency, shows the difficulty of solely subjective observations. Very often, as Dr. DuBois pointed out, ordinary hygienic measures, possibly some tea at 4:30, a sandwich and a cooky, will take that tired feeling away in a person who has resorted to thyroid for a long time.

DR. HARRY GOLD: How about a working rule for a course of treatment with thyroid material in the case of suspected hypothyroidism? You

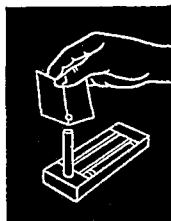
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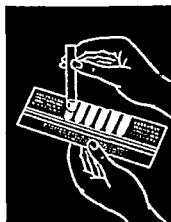
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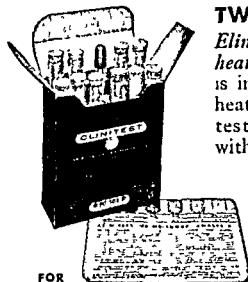
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[Continued from page 1480]

have a patient who, let us say, has symptoms suggesting myxedema, and either you cannot do a basal metabolism test or you find it near the border, minus 12. You decide to try thyroid. Would it do to proceed in this way: Give doses up to 3 grains a day, and if at the end of a week or two no distinct signs of improvement appear, one may then assume that it either is not a case of myxedema or that thyroid is not going to help? Would you agree to that as a working rule?

DR. SHORR: I think you can be reasonably sure of that. Our cases here with complete myxedema have required on an average 2 grains a day, and of the 20 or 30 cases that we have had under treatment none has required more than 3 grains.

DR. DuBOIS: Would not 3 grains be a pretty large dose? I should think it would be a better procedure to give 1 or 2 grains, and keep it up a month before you make your evaluation.

DR. GOLD: A month with a daily grain or two, and then if there is no response you are fairly sure it is not myxedema?

DR. SHORR: I think so.

DR. DuBOIS: Have you any figures on the strength of different preparations?

DR. GOLD: The U.S.P. preparations of thyroid are all assayed for their iodine content, and they are supposed to have a potency of approximately 2 mg. of iodine per Gm. of thyroid. Many people refer to the preparation as extract of thyroid. It is not an extract. It is just the gland, deprived of connective tissue and fat, dried, and powdered. In the older *Pharmacopoeias* it used to be called "dried thyroid." The newer revisions of the *Pharmacopoeia* do not label it "dried thyroid" but just "thyroid."

There have been some analyses of market preparations of thyroid. Preparations from different sources do not always produce equal effects in terms of their iodine content. Thompson (*J.A.M.A.*, 1935) and his coworkers reported that certain lots of beef and sheep thyroid produced less effect than hog thyroid in doses containing similar amounts of iodine. Lerman and Salter analyzed six preparations and found the iodine content to vary all the way from about 2 mg. to 4 mg. per Gm. of the dried gland. They examined those preparations further for the amount of thyroxine iodine, and found that this varied from 16 to 42 per cent. Examination of these specimens, however, in relation to their calorigenic action showed that they were not very far apart, which means that there are some factors relating to the potency of thyroid materials not directly explained by either the iodine or thyroxine content.

It is, perhaps, well to use thyroid material made by the same manufacturer, rather than to

shift from one to another, because in spite of the standardization by the iodine method there are differences in different thyroid materials which cannot be tested for at the present time. This will eliminate at least one source of variation.

There is just one other material which is used besides the thyroid itself, and that is thyroxine. I might call your attention to the fact that the *Pharmacopoeia* states the dose of thyroid as 60 mg. and of thyroxine as 0.5 mg. These are supposed to be equivalent. The dose of thyroid represents only 0.12 mg. of iodine, while of thyroxine, 0.32 mg. of iodine. This indicates that thyroxine iodine is not so effective in therapy as the iodine present in the original gland. This may in part be due to the fact that it is not so well absorbed from the gastrointestinal tract, which would be in line with what Dr. Shorr has said about thyroxine being irregular in its action and not so dependable as thyroid.

### Summary

DR. GOLD: The diagnosis of myxedema sometimes presents difficulties. It is to be distinguished from anterior pituitary disorders (Simmonds's disease) and Addison's disease. It is sometimes confused with primary heart disease, anemia, and Bright's disease. It may exist as a complication or an accompaniment of other diseases. There are substandard states of health associated with weakness and fatigue which are frequently treated as cases of myxedema because they present a slightly lower than the usual normal basal metabolic rate. There is considerable doubt whether thyroid medication produces any specific benefits in these cases and whether the reported benefits may not be the result of the other therapeutic measures usually applied at the same time.

Dr. Marine presented a very provocative discussion of the pathologic physiology of myxedema. He pointed out the difference between the thyroid gland after the removal of the pituitary and the thyroid gland in Gull's disease. In the former, the thyroid gland shows atrophy without signs of attempts at regeneration; in the latter, atrophy and regenerative hyperplasia may exist side by side. The thyrotropic hormone of the pituitary gland is active in Gull's disease and continues to stimulate the gland to activity, a fact which may lead to exhaustion atrophy. He indicated the glandular interrelations in myxedema by the example of the marked increase in urinary androgens during the administration of thyroid in patients with myxedema.

While most patients with myxedema have low basal metabolic rates, there are many patients with very low basal metabolic rates who do not

[Continued on page 1484]

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[Continued from page 1482]

show signs of myxedema. There are some myxedema patients with normal basal metabolism values. Most patients with myxedema are overweight; some are underweight. This indicates the complexity of the problem of thyroid deficiency.

In the therapy of myxedema the object is primarily to restore the patient to a metabolic state most consistent with optimum health. Reversal of laboratory tests to normal such as the basal metabolic rate and the blood cholesterol usually accompany such restoration. There is some danger, however, in depending upon these alone, since hypothyroidism may serve as a protective mechanism in cases of advanced circulatory disease. Restoration of the metabolism to the average normal sometimes results in attacks of angina pectoris and overloading of the circulation with resulting heart failure. The patient's symptoms must, therefore, be used as a guide to the extent to which reversal of the myxedema state is to be carried. The therapy should be developed very slowly, over a period

of a few months, in order to enable the patient to make appropriate adjustments to the increase in metabolism.

The myxedema patient is very sensitive to thyroid medication and if a dose as large as 180 mg. daily fails to produce significant improvement, there is reason for doubting the accuracy of the diagnosis.

While there are occasional patients with Gull's disease in whom the residual active thyroid may be stimulated by iodine administration, thyroid material is the most important medication. The method of its administration was discussed. Thyroid material is preferable to the pure hormone thyroxin because it is apparently better absorbed and its action is therefore more regular and dependable.

It is well to confine one's practice to the use of one preparation of thyroid, because in spite of the standardization of U.S.P. thyroid preparation there are differences in the effects produced by thyroid preparations from different sources even when given in equivalent doses in terms of iodine.

#### SALIVARY AMYLASE AND DENTAL CARIES

A clear relationship between salivary amylase and the incidence of dental caries is reported by Turner and Crane<sup>1</sup> of the Forsyth Dental Infirmary, Radcliffe College. In order to establish this relationship, the rate of starch hydrolysis by saliva was determined under standard test conditions. In persons without dental caries this hydrolysis required approximately forty-five minutes for completion. The saliva of those with four to six cavities completed the hydrolysis within nineteen minutes, those with ten to twelve cavities within seven minutes, and those with twenty to thirty cavities in

less than two minutes. Without exception the rate of starch hydrolysis increased in direct parallelism with the number of cavities. Of 51 carefully studied cases not one was found in which the salivary starch-splitting rate was an exception to this rule. The origin and nature of this qualitatively or quantitatively increased buccal amylolytic enzyme is now under investigation.—*J.A.M.A.*, May 6, 1944

<sup>1</sup> Turner, N. C., and Crane, E. M.: *Science* 99: 262 (March 31) 1944.

#### AMERICAN CONGRESS OF PHYSICAL THERAPY TO MEET IN SEPTEMBER

The American Congress of Physical Therapy will hold its twenty-third annual scientific and clinical session September 6, 7, 8, and 9, inclusive, at the Hotel Statler, Cleveland, Ohio.

The annual instruction course will be held from 8:00-10:30 A.M., and from 1:00-2:00 P.M. during the days of September 6, 7, and 8.

The scientific and clinical sessions will be given

on the remaining portions of these days and evenings. All of these sessions will be open to the members of the regular medical profession and their qualified aids.

For information concerning the instruction course and program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago 2, Illinois.

#### PENICILLIN AND GONORRHEA

The U.S. Public Health Service's Venereal Disease Research Laboratory, on Staten Island, New York, reports on treatment of sulfonamide-resistant gonorrhea with penicillin: seventy-six patients uncured by sulfonamides were given intramuscular injection of 10,000 units of penicillin every three hours, night and day, for forty-eight

hours. With one exception the group attained clinical and bacteriologic cures. The dose-time ratio employed was arbitrary.

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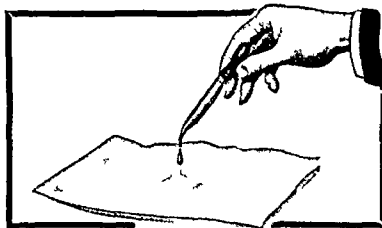
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# RINGWORM INFECTION OF THE SCALP IN THE HARLEM AREA

## Discussion of the Present Inadequate Methods of Control

GERALD A. SPENCER, M.D., New York City

INASMUCH as ringworm infection of the scalp has taken on almost epidemic proportions in the Harlem area of New York City I feel that it is worth while to discuss some of the intricacies of the problem and to call attention to the inadequate measures thus far employed in its control.

Harlem is situated in the upper part of Manhattan and covers an area of approximately 3 square miles. Living there is a population of nearly 400,000 persons, 90 per cent of whom are Negroes. Up to the present time the medical authorities, both public and private, have watched with a peculiar indifference the infection of *tinea capitis* among the children of this area. There were no modern diagnostic facilities and no adequate methods for the treatment and control. Methods employed thus far consist in treating most cases of scaling and crusting of the head as ringworm and then applying one of the so-called fungicidal remedies. It is, however, gratifying to know that within recent months there has been established at the district health office of the Department of Health a filtered ultraviolet light for detecting infection of fungi in suspected scalp lesions of children.

### Incidence of the Disease

The incidence is much higher in boys than in girls. Several factors may be offered as an explanation. Boys play and romp more than girls.<sup>1</sup> They indulge in exchange of hats and caps more than girls do, especially the exchange of stocking caps, the wearing of which was the only preventive measure heretofore advised. They have shorter hair, a factor enabling the fungus to reach the base of the hair, where it develops and spreads. The length of the girls' hair and the fact that careful hairdressing styles consisting of curling, straightening with heated combs, washing, and braiding are popular are the factors that offer resistance to the growth of the fungi in the scalp of girls.

### Important Points for Consideration

There are two essential points that should be retained in the analysis of ringworm infection.

1. The causative agents of *tinea capitis* found in this area consist in most cases of two types. There is *Microsporon lanosum*, which is contracted from animals such as the kitten

and the pup. The other is *Microsporon audouini*, which is of human origin. *Microsporon audouini* infection, because of its resistance to therapy, is more often seen; hence its apparently higher incidence. The mycologic identification of the organisms is important not only from the diagnostic point of view but from the point of view of the prognosis and the treatment of the infection.

2. Ringworm infection of the scalp occurs in children under the age of puberty—namely, those under 12 years of age and in the elementary school. In infants it is not usually seen, not because of any natural immunity but because of the limited opportunities for them to be exposed to those infected with the disease.

[Continued on page 1488]

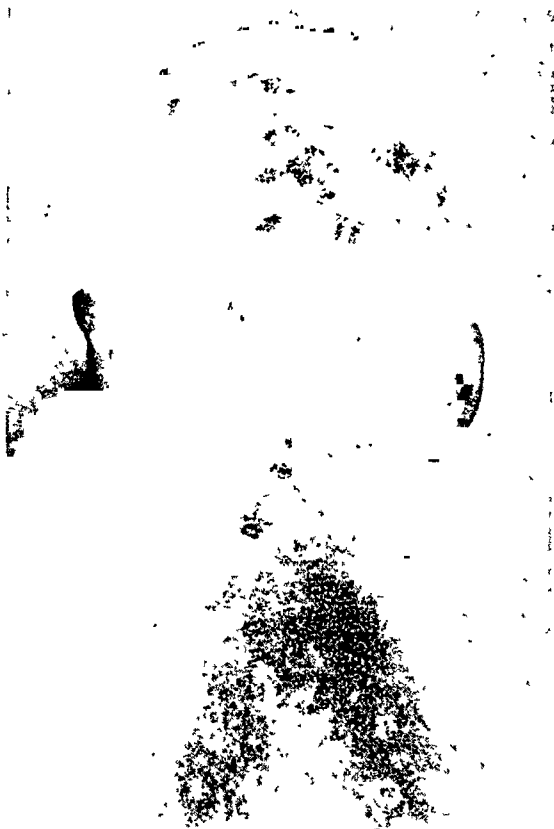


FIG. 1. Crusting lesions on scalp caused by staphylococci. No fungi were found.

<sup>1</sup> Lewis and Hopper; *An Introduction to Medical Mycology*, 1939; p. 45.



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[Continued from page 1486]

Control of the Infection

The diagnosis of tinea capitis should not be limited to clinical impressions which do not enable one to differentiate ringworm reaction of the scalp from that produced by any other pathogenic organism—as, for example, the staphylococcus (Fig. 1). Other methods are therefore necessary—especially the use of the Wood's filter illumination of filtered ultraviolet rays, under which the infected hairs show a characteristic fluorescent effect. By this method 20 to 40 children can be examined in an hour, and one cannot only detect carriers and contacts with newly infected hair, but can also use it as a means to control the success of treatment.

It is not sufficient to detect the presence of infection in the hairs. One should then determine by cultural and microscopic studies the type of organism, which is either *M. lanosum* or *M. audouini*. These organisms have distinctive characteristics that can be easily recognized under the microscope.

Treatment of tinea capitis consists in the use of topical applications in the form of wet dressings for the very acute phase, followed by salves



FIG. 2. Crusting lesions on scalp. *Microsporon lanosum* was the causative agent.



FIG. 3. Dry, scaly patch with alopecia. *Microsporon audouini* was the causative agent.

that are claimed to possess fungicidal powers, and roentgen therapy in sufficient and adequate doses to produce complete epilation. *Microsporon lanosum* infections are usually very acute, with production of oozing and weeping lesions (Fig. 2). This wet type responds favorably to topical remedies. Boric acid ointment is oftentimes sufficient to effect a cure. It is quite possible that the energetic allergic reaction of the scalp is the responsible factor in destroying the fungi rather than the topical remedies per se. On the other hand, *M. audouini* infection, most of the time, is dry and scaly; it stimulates hardly any inflammatory response of the scalp, and as a result seems to be deprived of the benefit of the desired allergic reaction (Fig. 3). In these cases x-ray therapy offers the best and quickest cure. In the hands of competent physicians trained in the use of superficial radiation, epilation can be accomplished in three to four weeks. However, it must be remembered that after the regrowth of hair following epilation, the child is by no means exempt from possibilities of reinfection. It then becomes a public health problem to eliminate early infected cases and control contacts and

[Continued on page 1490]



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## IN THE NEWS

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*Protesting the Rx Rule Revision*, which would limit its use to potent and harmful drugs, individual drug firms and industry associations have filed numerous protests with the Food & Drug Administration. Under the proposed revisions, manufacturers would not be permitted to use the Rx legend on products which may safely be used or taken without the advice of an M.D. Only prescription products, which are considered dangerous would continue to carry the caution legend. An official of the A.D.-M.A. charged that changes proposed "constitute a threat to the very existence of the ethical pharmaceutical industry. They will destroy the zone of products made by the ethical industry and the products ad-

sizes will be needed this year, as purifiers are furnished almost every soldier and sailor serving overseas.

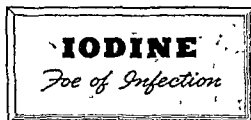


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[Continued from page 1488]

known sources of infection, such as barber shops etc.

### Community Need

In the Harlem area of over a quarter of a million persons there are no adequate means for the control of ringworm infection among the school children. There is need therefore for:

1. An adequate center or centers for diagnosis by the use of filtered ultraviolet rays in all cases of crusting and scaling lesions of the scalp of children under the age of puberty.

2. Cultural studies to identify the type of organism in order that the best method of treatment based on the microscopic identification of the fungi may be determined.

3. Superficial x-ray unit to treat infections caused by *M. audouinii*.

4. More extensive education of persons and agencies in the community so as to have greater cooperation in combating the disease.

### Summary and Conclusion

Ringworm infection in the Harlem area seems to have taken on epidemic proportions.

Public and private agencies have not concerned themselves with the growing threat.

In this area of over a quarter of a million persons there is need for a center equipped with adequate diagnostic and treatment methods so as to control the infection.

2135 Seventh Avenue  
New York City

### NEW CANCER GROUP PLANS FUND DRIVE

Proper care for advanced cancer patients of moderate means is urged by Julius Jay Perlmutter, president of the newly formed National Foundation for the Care of Advanced Cancer Patients, with temporary headquarters at 450 Seventh Avenue, New York City. Speaking at a luncheon in the Hotel Pennsylvania at the first meeting of the organization since receipt of its charter on May 4, Mr. Perlmutter announced a campaign for \$1,820,000 as the immediate objective of the foundation. This sum, he explained, would provide 365,000 days of hospital care, based on \$5 a day for a private room for each of 1,000 patients. "Indigent cancer patients are comparatively well provided for today," Mr. Perlmutter said.

"Suitable places are needed particularly for the advanced cancer patients of moderate means. There is none so unfortunate as the cancer patient who can afford to pay \$10 or so a week. There is no place for him to go.

"Our ultimate aim is to provide a low-cost private room and bath for every such patient, to be referred to the foundation with as little red tape as possible by cancer physicians.

"The number of beds assigned to cancer patients in this area is 550. Of these, 80 per cent, or 450 beds, are exclusively for indigent patients. Twenty-one approved cancer clinics in the metropolitan area are caring for 15,000 cancer patients.

In 1943 there were 13,171 deaths resulting from cancer in New York City. With the increased number of deaths, and the facilities to take care of inoperable patients already woefully inadequate, future facilities will continue to be increasingly short of what is required."

Dr. Frank E. Adair, president of the American Society for the Control of Cancer and chairman of the cancer committee of the American College of Surgeons, pointed out that treatment of cancer patients was more costly than in other diseases because it involved radium, x-ray equipment, and surgery. Dr. R. R. Spencer, director of the National Cancer Institute of Bethesda, Md., agreed, putting the annual cost for a bed patient at \$342.

He commented that "no other disease comes near that" and added that, although cancer was second in the cause of deaths, it was first in importance from the economic standpoint. He described the new foundation as "one of the most significant health movements in a long time."

Officers elected included Mr. Perlmutter, president; Dr. Adair, vice-president and medical adviser; Mrs. Francis J. Rigney, commander of the Woman's Field Army of the New York Cancer Committee; and Morris W. Haft, vice-presidents; L. Morton Morrison, secretary; Morris M. Bernstein, treasurer; E. S. Tewksberry and Irving Kurcias, assistant treasurers.

### PEDIATRIC BOARD CHANGES EXAMINATION DATES

The American Board of Pediatrics announces that, because of the shortage of hotel space in New York, the dates for the fall examinations there have been changed. The amended schedule reads that the written examination for all candidates planning to take the fall oral examinations will be held on Friday, September 22. The oral examinations planned for St. Louis will be November 8-9 and New York

City December 15-16. Dr. C. Anderson Aldrich, Rochester, Minnesota, secretary of the board, again announces that group I, which requires that an applicant shall have been specialized in pediatrics for ten years or more, will be abolished on July 1. All applicants, regardless of qualifications, must take both the written and the oral examination.—*J.A.M.A., June 10, 1944*

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# Case Report

## BOTULISM: REPORT OF RECOVERY AFTER SERUM

WILLIAM L. MARSDEN, A.B., M.D., Brooklyn

MRS. A. C., aged 35 years, entered the hospital on the service of Doctors I. L. Cabot and A. T. Mays on April 24, 1944, with chief complaints of blurred vision, inability to swallow, inarticulate speech, and drowsiness, all progressively worse for forty hours.

Her husband stated that she had eaten one mouthful of home-canned string beans thirty-six hours prior to the onset of these symptoms. The beans had been prepared without pressure cooking, and the patient ate no more than one mouthful before realizing that they were spoiled. There was no nausea, vomiting, diarrhea, constipation, or other symptoms until forty hours before entering the hospital, at which time she felt drowsy, had some difficulty in swallowing, and noted a slight blurring of vision. Simultaneously, her family observed a change in her speech, characterized by a rasping quality, lisping, and slurring of syllables. Constipation developed and Epsom salts failed to produce a bowel movement.

The patient remained in bed, but grew steadily worse. The blurred vision became exceedingly marked, until she was unable to recognize persons or objects at a distance of nine or ten feet. Along with this she complained of "seeing double," and was unable to swallow solids or fluids. Just prior to admission to the ward her speech was completely inarticulate.

Throughout the entire course of the illness there was no pain, nausea, vomiting, diarrhea, melena, convulsive seizures, amnesia, mental symptoms, or loss of consciousness. The patient's past history, family history, and review of symptoms were essentially irrelevant.

### Physical Examination

The patient was a well-developed, well-nourished, white, adult woman, lying in bed and appearing gravely ill. She was drowsy but could be roused. Sensorium was entirely clear, and questions were answered intelligently by affirmative or negative head movements.

Marked bilateral blepharoptosis was the outstanding feature of the face. The eyes revealed small fixed pupils, lack of convergence, bilateral decrease in upward and downward movement of eyeballs, and bilateral sixth cranial nerve palsy, manifested by inability to rotate the eyes laterally past the midline. The fundi revealed no hemorrhages, exudate, vascular changes, or edema of the optic nerve head.

The oral mucosa was markedly dehydrated, not inflamed, and no gag reflex could be demonstrated. No evidence of vocal cord paralysis was found.

From the Medical Division, Methodist Hospital, Brooklyn.  
Resident in medicine, Methodist Hospital, Brooklyn.

Examination of heart and lungs revealed no abnormalities.

The abdomen exhibited moderate gaseous distention and bilaterally absent abdominal reflexes. However, faint peristaltic sounds could be heard, and there were no tenderness, spasm, organs, or masses palpable.

Pelvic and rectal examinations were not performed.

A complete neurologic examination showed hyperactivity of all superficial and deep reflexes of the extremities; absent abdominal reflexes; no Babinski, Oppenheim, Gordon, Hoffman, clonus, or other pathologic reflexes, and the sensations appeared normal. There was bilateral sixth cranial nerve paralysis, weakness of all extraocular muscles, fixed pupils, and blepharoptosis. However, the other cranial nerves appeared normal.

The clinical impression was of acute encephalitis, probably due to *Clostridium botulinum* toxin, on the basis of the history.

### Laboratory Data

The unused portion of beans was immediately sent to the laboratory, where a direct smear of the juice revealed gram-positive spore-bearing bacilli, morphologically identical with *C. botulinum*. Anaerobic culture, reported eighteen hours later, produced a gram-positive, spore-forming, gas-producing bacillus identical with *C. botulinum*.

Blood counts, urine, sedimentation rate, and blood chemistry were normal.

Lumbar puncture showed crystal-clear fluid under no increased pressure. The cell count, globulin, chlorides, Wassermann, colloidal gold, and sugar content were within normal limits.

The specimen of beans was sent to the New York City Department of Health Experimental Laboratories, where the following findings were made:

1. Injection of 0.5 cc. of a 1:1000 dilution of bacteria-free filtrate killed all inoculated mice in twelve hours.

2. Injection of 0.5 cc. of a 1:1000 dilution of the same filtrate failed to kill any mice of a group previously immunized with antitoxin serum type B, whereas all animals previously inoculated with type A serum died.

3. Injection of 0.5 cc. of a 1:1000 dilution of boiled bacteria-free filtrate failed to kill any injected mice.

These latter tests definitely confirmed the diagnosis of botulism due to *C. botulinum* type B.

### Treatment

A high colonic irrigation was given at once, with the expulsion of large amounts of flatus. Following

[Continued on page 1494]



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**MERCK & CO., Inc. Manufacturing Chemists RAHWAY, N. J.**

[Continued from page 1492]

this, infusion of one liter of normal saline was started, on completion of the physical examination.

Upon identification of gram-positive, spore-forming bacilli in the direct smear, polyvalent anti-botulinum serum, types A and B, was obtained within one hour through cooperation of the New York City Department of Health and police emergency messenger. This was administered intravenously in doses of 10,000 units every four hours until a total dosage of 130,000 units had been given. At that point, clinical improvement merited cessation of serum administration.

Parenteral fluids and feeding through a Levin tube maintained general nutrition and body hydration. A daily dosage of 2 drams of cascara sagrada with 1 dram of mineral oil assured proper intestinal movements.

### Course in Hospital

During the first eighteen hours there was no change noted in the clinical appearance of the patient. However, after twenty-four hours she appeared somewhat less drowsy and was able to open her eyes wide without evident paralysis of the upper lids. There still persisted complete sixth cranial nerve palsy, and no improvement in speech or ability to swallow was noted.

After 70,000 units of serum (thirty hours) she was able to speak rather clearly, but in a faint whisper. Complete return of voice came about at the end of forty-eight hours of serum therapy, at which time she was sitting up in bed and able to swallow fluids in a normal fashion.

All evidence of extraocular palsy and all neurologic findings were completely absent at the end of the third day, and serum administration was concluded at that time after a total dosage of 130,000 units.

The patient noted a persistent weakness and lassitude, while constipation continued to be marked at that time.

On the fourth day there was a sudden rise in temperature to 103.6 F. along with a complaint of stabbing pain in the left side of the chest, most marked on deep inspiration. Examination revealed a faint friction rub with a few fine, crepitant rales in the ninth intercostal space posteriorly. A diagnosis of bronchopneumonia with pleurisy was made and sulfadiazine therapy was instituted. The temperature returned to normal in forty-eight hours and therapy was discontinued two days later.

The patient was allowed to sit up in a chair on the twelfth day in the hospital and was up and about two days later. She was discharged from the hospital on the seventeenth day to be followed by the outpatient clinic. At the time of discharge, the only complaints were a mild degree of weakness and some blurring of far vision.

### Summary

This was a case of botulism due to *C. botulinum* type B, as proved by bacteriologic and immunologic studies. The classic picture of this disease was evident, with a history of eating spoiled home-canned beans, later followed by extraocular palsies, blepharoptosis, blurring vision, diplopia, aphonia, dysphagia, and obstipation. Recovery was prompt and complete following administration of serum. Mild bronchopneumonia presented itself as a complication but was promptly controlled with sulfadiazine and the patient was discharged for home convalescence seventeen days after entering the hospital.

It is interesting to note that this was the first case of botulism reported within the confines of Greater New York since 1938.

## INTERNATIONAL COLLEGE OF SURGEONS TO MEET IN PHILADELPHIA

The Ninth Annual Assembly of the International College of Surgeons will be held on October 3, 4, and 5, 1944, at the Benjamin Franklin Hotel in Philadelphia, Pennsylvania.

The program will be devoted to war, rehabilitation, and civilian surgery.

This Assembly, sponsored by the United States Chapter, of which Dr. Thomas A. Shallow, F.A.C.S., F.I.C.S., of Philadelphia, is president, has set up its arrangement committee with Dr. Rudolph Jaeger as general chairman. Dr. Jaeger will be inducted as the incoming president of the United States Chapter at the Convocation on Wednesday, October 4. The new president came to the Jefferson Medical College from Denver, Colorado, where he specialized in neurosurgery.

Eminent surgeons in government, military, and

civilian practice have been invited to attend and present papers pertinent to surgery in their particular field of endeavor.

The chairmen of the various committees are: Dr. William Bates, president-elect of the Pennsylvania Medical Society, Program Committee; Dr. John Royal Moore, Philadelphia, Exhibits; Dr. Moses Behrend, Philadelphia, Publicity; Dr. Leonard D. Frescoln, Philadelphia, Hospital Clinics; Dr. William L. Martin, Philadelphia, Registration; Dr. Ernest F. Purcell, Trenton, N.J., Convocation; Dr. John E. Loftus, Philadelphia, Entertainment; Dr. Harold D. Corbusier, Plainfield, N.J., Rehabilitation; Dr. Benjamin Shuster, Philadelphia, Housing; Dr. William F. Whelan, Motion Pictures. The medical profession is invited to attend the Assembly and its sessions.

1480

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\*A New Type of Medication to be used in Bronchial Asthma and other Allergic Conditions.—New Eng. J. Med. 223:843-846, 1940.

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### Member Physicians in the Armed Forces

#### Supplementary List

The following list is the twenty-first supplement to the Honor Roll published in the December 15, 1942, issue. Other supplements appeared in the January 1, January 15, February 15, March 1, March 15, April 15, June 1, July 1, August 1, September 1, October 15, November 15, December 15, 1943, January 15, February 1, February 15, March 1, May 1, May 15, and June 1, 1944, issues.—*Editor*

#### A

Alexander, R. E. (Maj.)  
Vet. Adm. Facility, Bath, N.Y.  
Armen, R. N. (Lt.)  
A.P.O. 708, c/o P.M., San Francisco, Calif.  
Asch, J. K. (Lt.)  
Sta. Hosp., Ft. Leavenworth, Kan.

#### B

Babey, A. M. (Lt.)  
U.S. Naval Hosp., Brooklyn, N.Y.  
Battaglia, B.  
1621 W. 6 St., Brooklyn 23, N.Y.  
Bauman, S. (Lt.)  
Camp Wolters, Tex.  
Bobb, H. J. (Capt.)  
114th Gen. Hosp., Ft. Bragg, N.C.  
Burr, A. H.  
20 E. 190 St., Bronx 58, N.Y.

#### C

Caia, C. C. (Maj.)  
U.S. Port Surg., Hq. H.R.P.E.,  
Newport News, Va.  
Cain, R. R. (Lt.)  
2340 E. 2 St., Brooklyn 23, N.Y.  
Coviello, V. J.  
250 Bedford Park Blvd., Bronx 58,  
N.Y.  
Crawley, L. Q. (Lt.)  
50 Commerce St., New York 14,  
N.Y.

#### D

Davies, B. T. (Capt.)  
1195 Lake Ave., Rochester 13, N.Y.  
Deegan, J. K. (Maj.)  
30 Sherman St., Newport, R.I.  
Dial, D. E.  
16th Gen. Hosp., A.P.O. 526, c/o  
P.M., New York, N.Y.  
Di Fronzo, E.  
La Garde Gen. Hosp., New Orleans,  
La.  
Dwyer, T. A.  
2305 University Ave., Bronx 53,  
N.Y.

#### F

Feuer, S. G. (Lt. Comdr.)  
304 Marcy Ave., Brooklyn 11,  
N.Y.  
Feigenheimer, E.  
281 Covert St., Brooklyn 27, N.Y.  
Fink, H.  
700 Ocean Ave., Brooklyn 26, N.Y.  
Flowers, H. L. (Maj.)  
631 Kappock St., Bronx 63, N.Y.

#### G

Goldstein, N. A. (Lt. Comdr.)  
809 Washington Ave., Brooklyn 16,  
N.Y.  
Greenberg, A. (Capt.)  
P.O. Box 2614, Hines, Ill.  
Grossman, M. J.  
10 Ocean Parkway, Brooklyn 18,  
N.Y.  
Guggenbuhl, F. G. W. (Lt. Comdr.)  
Norfolk Navy Yard, Portsmouth,  
Va.

#### H

Halleman, G. (Capt.)  
56th O.T.B. Carlisle Barracks, Pa.

Hewson, R. J. (Lt. Comdr.)  
c/o Fleet Post Office, New York,  
N.Y.

Howard, T. J. (Lt.)  
Newport, N.Y.

#### I

Irvine, V. K.  
Granville, N.Y.

#### J

Jacobs, M.  
91 Harrison Ave., Brooklyn 6, N.Y.

#### K

Kahane, A. (Lt.)  
3010 Valentine Ave., Bronx 58, N.Y.  
Klugler, J.  
State Hosp., Central Islip, N.Y.  
Kolodny, G. R. (Lt.)  
1211 45 St., Brooklyn 19, N.Y.  
Kossin, B. (Lt.)  
2842 Pearl St., Austin, Tex.  
Kottnetz, H. A. W.  
133 Main St., Herkimer, N. Y.  
Kottnetz, M. E.  
133 Main St., Herkimer, N.Y.

#### L

Leeds, L. W. (Capt.)  
A.P.O. 557, New York 1, N.Y.  
Levy, F. R. (Lt.)  
Fitzsimons Gen. Hosp., Denver,  
Colo.  
Libin, I.  
1882 Grand Concourse, Bronx 57,  
N.Y.  
Lichtman, H. S.  
8801 Bay Parkway, Brooklyn 14,  
N.Y.  
Long, R. D.  
Bronxville, N.Y.

#### M

Marciano, C. A., Jr., P.A. Surg.,  
U.S.P.H.S.  
420 Clinton St., Brooklyn 31, N.Y.  
Meltzer, T. (Lt.)  
c/o Photovend, 40 E. 31 St., New  
York 10, N.Y.  
Merkel, C. G. (Lt.)  
U.S. Naval Hosp., Brooklyn, N.Y.  
Montana, C. (Capt.)  
R # 1, Box 367, Saugerties, N.Y.  
Murphy, M. J.  
2720 Foster Ave., Brooklyn 10, N.Y.  
Myers, L. E.  
Winter Park, Fla.

#### O

Oshlag, J. A., P.A. Surg. (R) U.S.-  
P.H.S.  
U.S. Marine Hosp., Mobile 16, Ala.

#### P

Payne, S. O.  
772 St. Nicholas Ave., New York 31,  
N.Y.  
Pettit, M. D. (Lt.)  
c/o Post Medical Det., U.S. Marine  
Base, Parris Island, S.C.

#### Q

Quinlan, E. A., Jr.  
Port Chester, N.Y.

#### R

Rackow, L. L. (Capt.)  
Vet. Admin., Northport, N.Y.  
Rakow, L. S. (Lt.)  
Sta. Hosp., Ft. McDowell, Calif.  
Reich, N. E.  
75 Ocean Ave., Brooklyn 25, N.Y.  
Ressler, H. B.  
4015 14 Ave., Brooklyn 19, N.Y.  
Roberts, L. B. (Capt.)  
262nd AAF BU (CCTS(F)), Sec-  
tion M AAF, Bruning, Neb.  
Roswit, B. (Capt.)  
295 Ocean Pkwy., Brooklyn 18,  
N.Y.

#### S

Schenkman, H. (Capt.)  
120th Gen. Hosp., Camp Van Dorn,  
Miss.  
Seligmann, E.  
40 Williams St., Whitehall, N.Y.  
Shapiro, L. E. (Capt.)  
A.P.O. 230, c/o P.M., New York 1,  
N. Y.  
Shnayerson, E. F.  
659 Linden Blvd., Brooklyn 3,  
N.Y.  
Simms, L. M. (Lt.)  
228 Maple St., Brooklyn 25, N.Y.  
Sohrweide, A. W.  
106th Gen. Hosp., Ft. McClellan,  
Ala.  
Solomon, I. (Capt.)  
3rd Gen. Hosp., A.P.O. 423, c/o  
P.M., New York, N.Y.  
Stoll, B.  
c/o Mrs. B. Stoll, 378 West End  
Ave., New York 24, N.Y.  
Sweet, B. L., Jr. (Lt.)  
Tarrytown, N.Y.

#### T

Tadross, V. A. (Lt.)  
8631 Ft. Hamilton Pkwy., Brooklyn  
9, N.Y.  
Tarasuk, I. A.  
1900 Quentin Rd., Brooklyn 29,  
N.Y.  
Teicher, M. I.  
7705 20 Ave., Brooklyn 14, N.Y.

#### V

Vinacor, H. (Lt.)  
Finney Gen. Hosp., Thomasville,  
Ga.

#### W

Weiner, A. A. (Lt.)  
Sta. Hosp., Camp Maxey, Tex.  
Weinstein, M. V.  
605 Vermont St., Brooklyn 7,  
N.Y.  
Witten, M.  
Vet. Admin. Facility, Montgomery,  
Ala.  
Wolff, E. F. (Lt.)  
3501 F St., Vancouver, Wash.  
Wolfson, S.  
1566 52 St., Brooklyn 19, N.Y.

#### Z

Zucker, S. (Lt.)  
Brooklyn Navy Yard, Brooklyn,  
N.Y.



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## IN THE INTEREST OF SCIENCE

*The American Weekly* (May 14, 1914) revealed an interesting story of a man who "died" four times for science.

Sir Joseph Barcroft, the Briton who gambled with the Grim Reaper for the good of medical science and his fellow men, has just received at the age of 71, a medal from the British Royal Society for his self-imposed brushes with oblivion.

As a young and inquisitive physiologist, Sir Joseph became convinced that the mind works best when the blood has a certain balance between its . . . . . ents And when this . . . . . the brain is affected.

. . . . . that low temperatures do something to the blood, so he removed most of his clothes and had himself shut up in a little room as cold as the Arctic. Only when his mind refused to function normally and he was, literally, almost frozen and unconscious did he signal for a rescue. In another experiment to test the effects of poisonous gases on the blood stream, he spent ten minutes with a dog in a chamber containing prussic acid fumes. The dog ceased to breathe long before Sir Joseph quit—with more valuable information for mankind.

In a third and very painful test of man's durability, he lived for a week in a sealed glass case from which life-giving oxygen was gradually removed. He found out what he wanted to know, but almost cut his career short accomplishing it. A fourth experiment included a twenty-minute sojourn in a carbon-monoxide filled room.

Commenting on his "journeys" that few have ever lived through to describe, Sir Joseph confirmed that freezing to death is one of the least painful ways to depart from this troubled world. "As I lay naked in that below-zero room," he reported, "I folded my arms and legs in an effort to protect myself from the painful cold. I couldn't think clearly as I lay shivering. Then came a beautiful, peaceful feeling of warmth. I stretched out my legs and, literally, basked in the bitterly frigid atmosphere."

## A New Hollywood

A moving picture of the birth of triplets was made in England.

As an aid to medical science, Mrs. Constance Hibbert of Snyderdale, England, consented to the photographing of her triple blessed event, which consisted of two girls and a boy. There were 20-minute intervals between births.

Jean, the first born, weighed five pounds; John, the second, weighed five and a quarter pounds. June, the third, weighed three and a half pounds.

What the picture may tell doctors that they do not already know is still unreported.

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ynovitis of  
profundis  
t. In other

words, I have a sore finger. So please excuse my errors in typing."

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# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman (428 Greenwood Place, Syracuse); George Baehr, M.D., and Charles D. Post, M.D.*

## Lectures on Penicillin Therapy at Westchester and Cattaraugus Meetings

THE Westchester County Medical Society met on June 20 at 9:00 P.M. at the New York Hospital, Westchester Division, in White Plains.

Dr. James E. McCormack, instructor in medicine at New York University College of Medicine in New York City, delivered a lecture entitled "Penicillin Therapy."

This instruction is provided jointly by the Medical Society of the State of New York and the New York State Department of Health.

The Cattaraugus County Medical Society re-

ceived postgraduate instruction in "Penicillin Therapy" on June 22 at 6:30 P.M. The meeting was held at the St. Bonaventure Golf Club in Allegany, New York.

Dr. William J. Orr, professor of pediatrics at the University of Buffalo School of Medicine, delivered the lecture.

This instruction was presented as a cooperative endeavor between the Medical Society of the State of New York and the New York State Department of Health.

## Instruction in Gynecology and Obstetrics in Ontario County

POSTGRADUATE instruction in obstetrics and gynecology has been arranged for the Ontario County Medical Society. The meeting is to be held on July 11 at 6:30 P.M. at the Geneva Country Club in Geneva.

The first lecture will be "Gynecology in General Practice." Dr. Nathan P. Sears, professor of gynecology at the Syracuse University College of Medicine, will speak.

The second lecture will be "Caudal Anesthesia in Obstetrics" by Dr. Francis R. Irving, professor of clinical obstetrics at Syracuse University College of Medicine, and Dr. Charles A. Lippincott, Fellow in Obstetrics at Syracuse University College of Medicine.

This instruction is presented as a cooperative endeavor by the Medical Society of the State of New York and the State Department of Health.

## PHYSICIAN POPULATION INCREASED BY 2,570 LAST YEAR

There were 5,952 additions to the medical profession in 1943, according to the data presented in the forty-second annual compilation of medical licensure and allied statistics by the Council on Medical Education and Hospitals of the American Medical Association and published in the *Journal of the Association* for May 13.

The report says that the number of physicians removed by death in 1943 was 3,382. "It would appear, therefore," the report says, "that the physician population in the United States last year was increased by 2,570. In view of the accelerated curriculum, with two classes graduating from most schools in 1943, one might expect that additions to the profession should be considerably higher. This, in reality, is the case at the present time. However, many physicians who obtained M.D. degrees in December of 1943 were not able to receive licenses until early in the year 1944, owing to administrative details. . . ."

"Estimated figures indicate that on February 1, 1944, the number of physicians in continental United States, including those licensed in 1943, was 186,496.

Excluding physicians who are in military service, engaged in full-time hospital work, retired,

not in practice, or engaged in full-time teaching, there remain about 100,000 physicians in private practice, some of whom are part-time teachers. . . ."

Throughout 1943, 8,392 graduates were examined for licensure, of whom 7,478 passed and 914 failed. Of 6,427 graduates of approved medical schools in the United States only 1.5 per cent failed. Of 76 graduates of approved Canadian schools, 15.7 per cent failed; of 101 who graduated from approved schools no longer operating, 5.0 per cent failed; of 1,031 graduates of faculties of medicine located in countries other than the United States and Canada, 49.8 per cent failed. There were 38.4 per cent failures among 757 graduates of unapproved schools.

Of particular interest is that portion of the report concerning licensure for relocated physicians. The report says that "Removal of physicians from civilian practice has resulted in a shortage . . . in critical areas, especially in some industrial and rural sections of the country. To assist physicians attempting to relocate in such areas, the licensing boards of fifteen states provide for the issuance of temporary permits or certificates to practice medicine. . . ." A total of 244 such temporary permits were granted by the fifteen states during 1943.



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## IMPROVING PHARMACIST-DOCTOR TEAM

The American Pharmaceutical Association is encouraging colleges of pharmacy and medicine to cooperate in fostering a more effective understanding to smooth interprofessional relationship.

Such a program has already been undertaken by the Medical College of Virginia. How it works is briefly described by Harvey B. Haag, head of the Department of Pharmacology.

"The school of pharmacy here at the college," states Mr. Haag, "was asked some several years ago to aid in the teaching of prescription writing to our medical students. This cooperation was gladly given. At present during the regular pharmacology course eight lectures are given by Dr. T. D. Rowe and Dr. Karl Kaufman, in which the more common pitfalls and errors of prescription writing, as the pharmacist sees them, are brought to the attention of the medical students. In addition, other problems of mutual concern, such as, for instance, the intricacies of the narcotic laws, are discussed.

While this program has been in progress too short a time for final evaluation, it is already evident that the pharmacist is to continue to contribute to the betterment of the medical profession in the coming years.

## QUINIDINE UNDER STRICTER CONTROL

A WPB order published May 9, places Quinidine under more strict allocation.

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cate. Restrictions on quinine, cinchonine, cin-  
chonidine, and totaquine remain unchanged.

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"HOW'S BUSINESS?"—A compilation of chain stores sales for March 1944 as compared with the same month in 1943, showed that of the twenty-nine leaders all but six showed substantial increases. Sears, Roebuck lead the 'eld with total sales of \$78,623,881 (over \$12,000,000 more than in March 1943); Montgomery Ward was second with \$53,382,733; Safeway Stores, third with almost \$48,000,000 in sales; J. C. Penney, fourth with over \$38,000,000; and Woolworth was fifth with over \$34,000,000.

In most instances total stores in operation showed a decrease. Among those reporting, Safeway Stores had 2,464 branches in operation, J. C. Penney had 1,609 and National Tea had 871.

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**SNORTS**—Blood donors are sure of a snort as a bracer after their donation at the College Point, Queens, blood bank. The local Kiwanis Club pledged a year's supply of liquor to the bank.

**WARNING**—A message from the Pacific front warned the girls at home to hang on to their men for between the Australian women and the Army Nurses they're going fast. According to Lt. Col. Jane Clement, director of 3,000 Army nurses in the southwest Pacific, an average of four nurses a day are being married to fighting men in that theatre

**RUM HOUNDS**—As reported to the American Psychiatric Association by Dr. Jules H. Masserman and his assistants of the University of Chicago, jittery cats are rum hounds. Healthy cats, given a chance to drink alcohol, refuse; but neurotic kitties prefer liquor. After the animals recover from their jitters they go on the wagon, permanently.

**STEAKS FROM CORN GERM**—Dr. H. H. Mitchell, protein expert of the University of Illinois, and other researchers have discovered that the corn germ comes up to beef in protein nourishment. They have further discovered that the oil in corn germ (which quickly becomes rancid) is often removed from corn products. Maybe our forebears had some reason, after all, for insisting that wheat and corn products should be ground not more than one week before consumption.

**SAUERKRAUT**—"You can have my share of sauerkraut," declares a news contributor, "However, I won't deny eating it is good for the health. One medical expert referred to it as 'the vacuum cleaner of the stomach.' Sauerkraut did not originate in Germany but in China. It was used by the Chinese to furnish the vitamins that are lacking in a rice diet.

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\* \* \*

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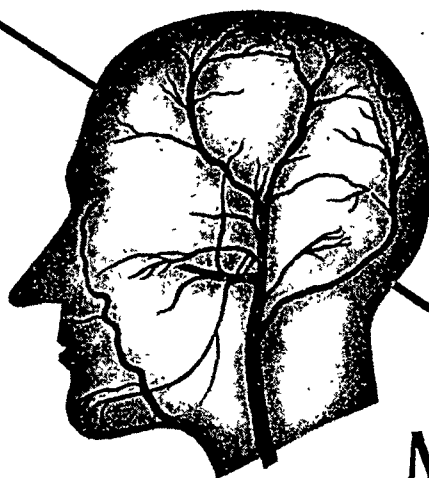
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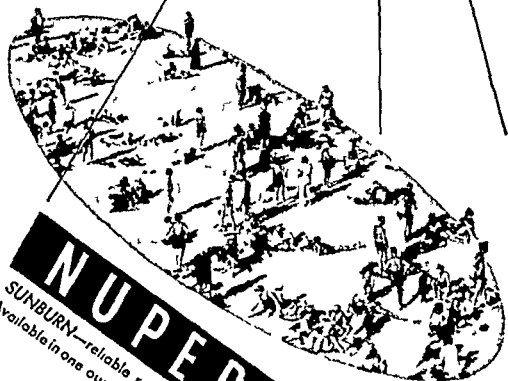


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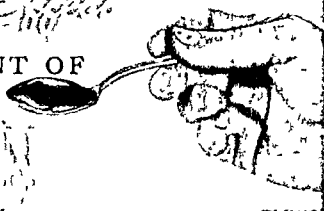
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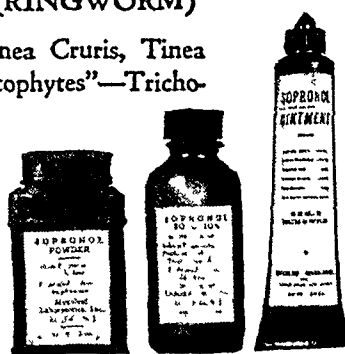
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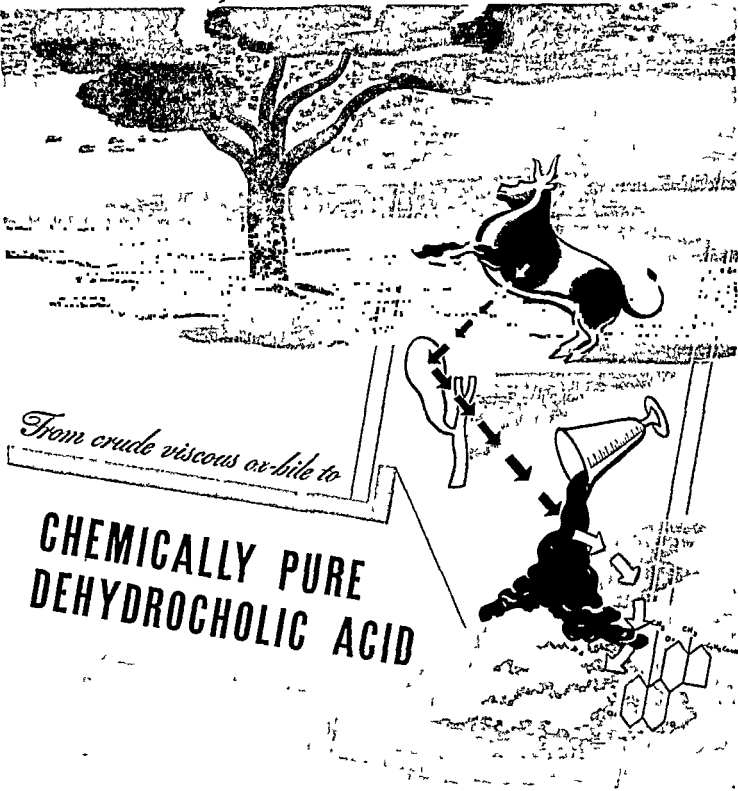


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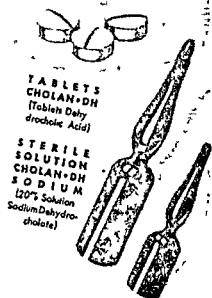


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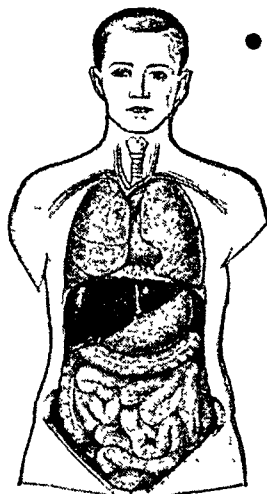
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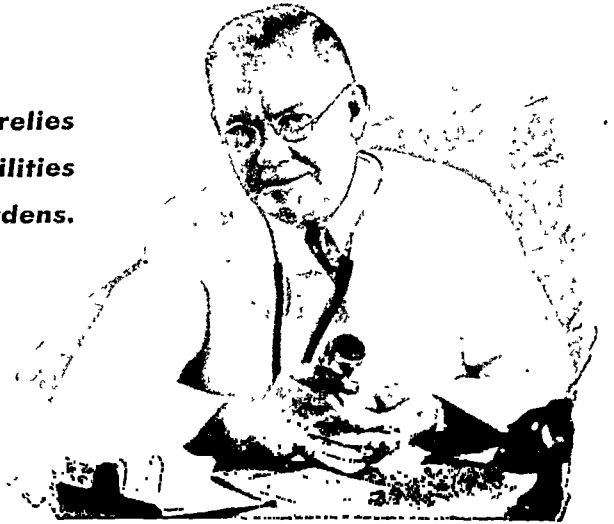
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FIGURE A—Photographic Method

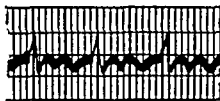


FIGURE B—EPL Method



FIGURE C—Calibration

The exact similarity between the standard photographic cardiogram and the direct instantaneous cardiogram on this new EPL instrument is indicated in Figures A and B, which are records of the same subject taken a few minutes apart

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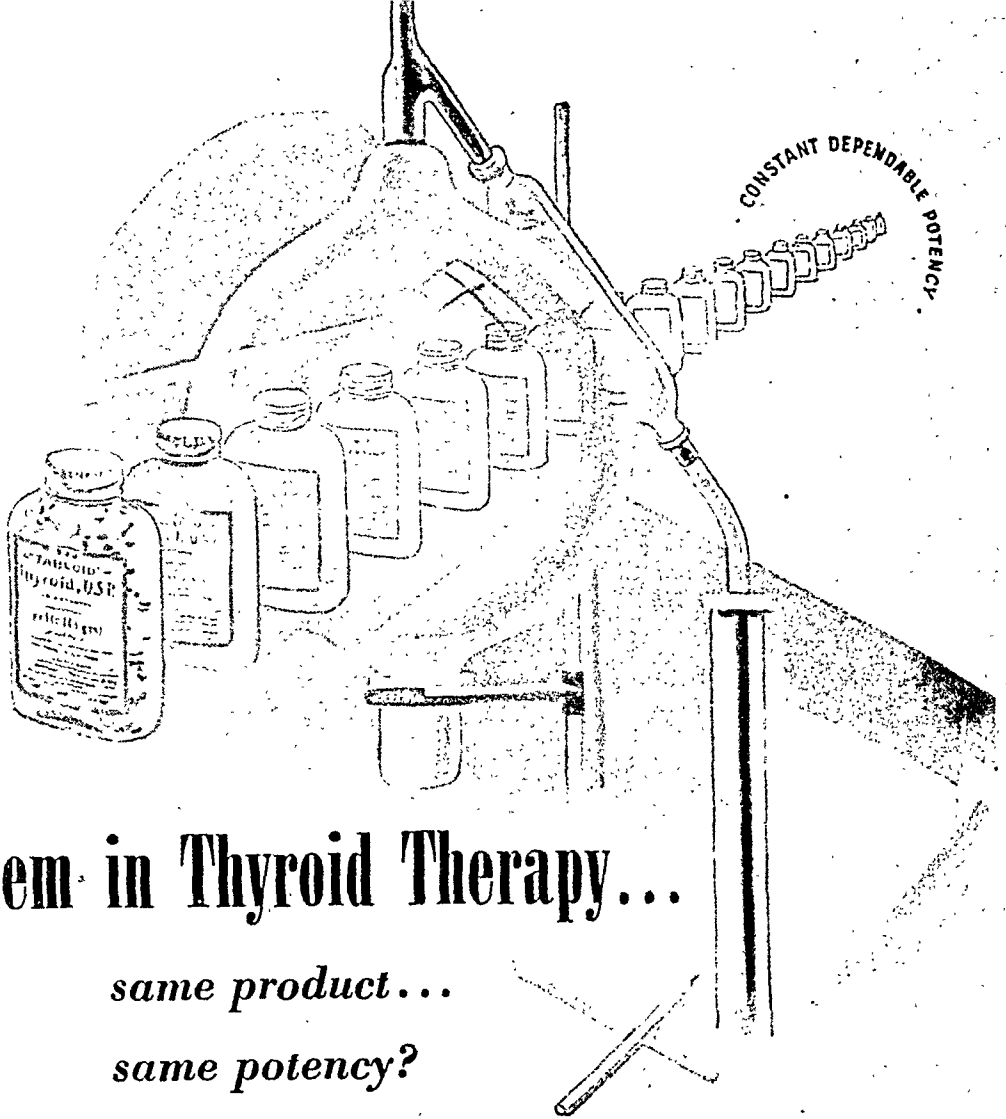
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(1) *Am. J. Obst. & Gyn.*, 35 839, 1938 (2) *West. J. Surg., Obst. & Gyn.*, 51 150, 1943. (3) *Clin. Med. & Surg.*, 46 327, 1939 (4) *Med. Rec.*, 155.316, 1942.

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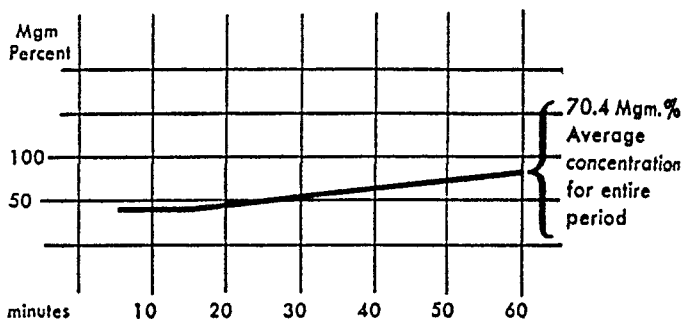
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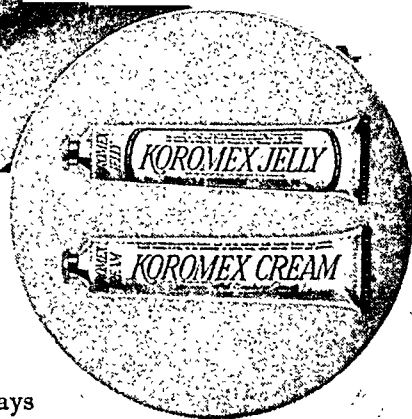
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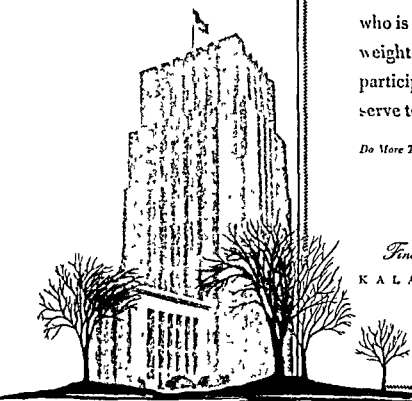
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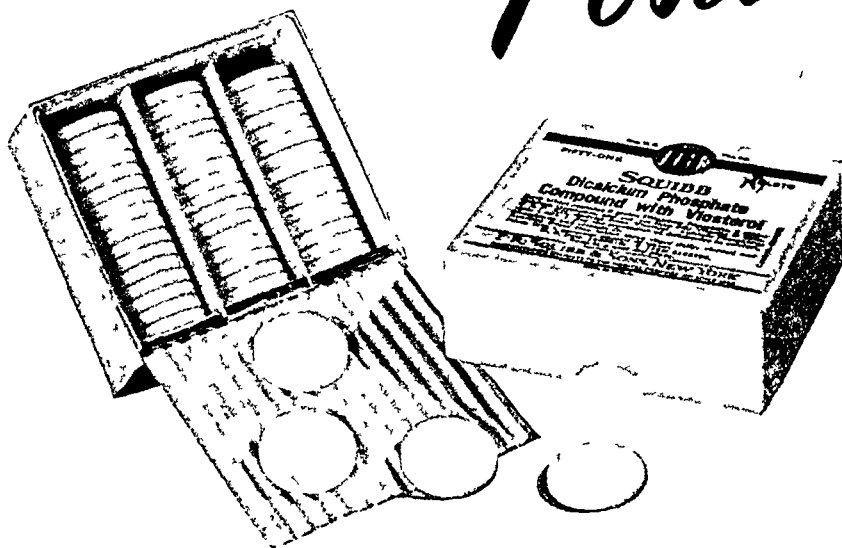
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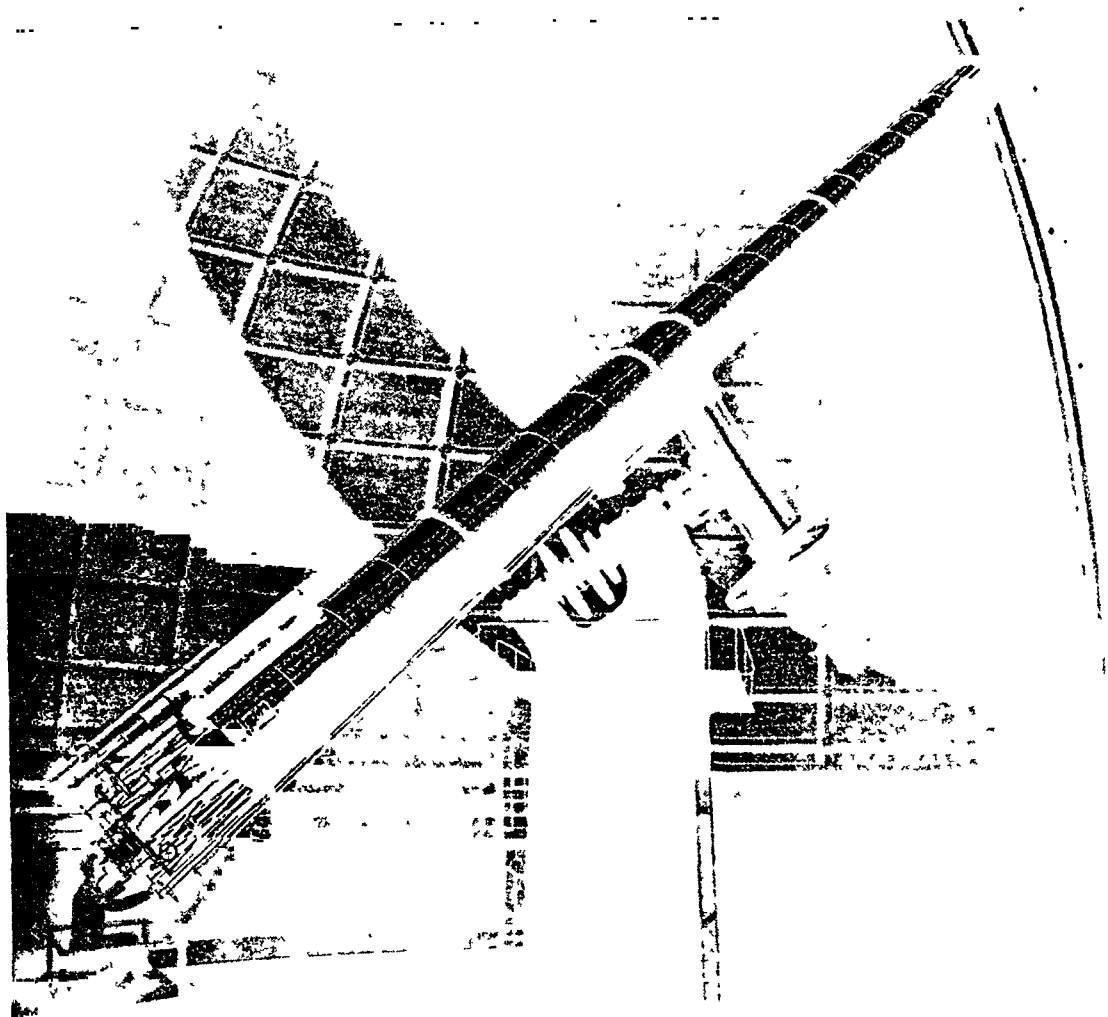
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VOLUME 44

JULY 15, 1944

NUMBER 14

## *Editorial*

### Continuous Medical Education

The problem of providing for continuous medical education in this nation has apparently reached an acute stage. It has been the subject of much study on the part of many agencies.

"In December, 1942, it was agreed by the Surgeons General of the Army and Navy and the directing board of the Procurement and Assignment Service that classes admitted to medical schools for the duration of the war should be made up of the following groups: Army Specialized Training Program students, 55 per cent; Navy V-12 students, 25 per cent; and civilian students 20 per cent, the latter group to be made up of women and men physically disqualified or otherwise ineligible for military service.

"The curtailment of the Army Specialized Training Program in April, 1944, provided that medical students and premedical students in the Army Specialized Training Program should continue in training but that no more students should be admitted to the program. . . ."

The curtailment of the A.S.T.P. program will, in fact, allow the filling of only 28 per cent of the places in the classes to be admitted to medical schools in 1945. The Navy will continue to fill 25 to 31 per cent of the places, according to the Directing Board, Procurement and Assignment Service

for Physicians, Dentists, Veterinarians, Sanitary Engineers, and Nurses.

"The condition seems to have reached a stalemate. Apparently the responsibility for action lies now with the Director of the Selective Service System, General Hershey. Several high officials of our government have indicated their complete sympathy with the necessity for maintaining continuity of medical education on a high standard. Apparently, however, the Secretary of War, Henry L. Stimson, and the Secretary of the Navy, James Forrestal, are not sympathetic to this need. They have said in a joint communication that the proposal to place premedical and premedical students on an inactive status in the enlisted reserve corps so that they may continue their studies would provide immunity from military service for five or more years to a selected group of young men. They suggest, moreover, that the essential in the selection would be the ability of the parents to finance the education, together with the ability of the student to complete the premedical or premedical courses and thereafter to qualify for entrance into approved medical or dental colleges.

"Apparently the Secretary of War and the Secretary of the Navy oppose granting deferment to premedical students, notwithstanding that failure to do so will lower tremendously the number of graduates in medicine and dentistry in the years 1948 and 1949. The opposition is based on the grounds that the armed forces need young men of intelligence with the proper physical qualifications

and that the immediate needs of the war for their services ought not to yield to the prospective use of these young men as doctors at a later date. They support this contention with the argument that may doctors now in the military service will be released by 1948."

The chronology of recent consideration of the problem is given below:

"The reduction in the Army Specialized Training Program had the effect of increasing the number of places which must be filled by civilian medical students by 27 per cent. This situation gave concern to the directing board of the Procurement and Assignment Service lest it be found impossible to secure an adequate number of properly qualified candidates for medical schools to fill the classes in the future and to keep the supply of doctors constant and adequate.

"Early in April Selective Service, after conference with the Inter-Agency Committee on Occupational Deferment, ruled that premedical students acceptable to the armed services, unless accepted for admission and matriculated and entered into actual classroom work in a recognized school of medicine on or before July 1, 1944, will no longer be deferred.

"The Procurement and Assignment Service wishes to record the following developments which have taken place since that time:

"At a joint meeting of the directing board of the Procurement and Assignment Service with the Surgeons General of the Army, Navy, and Public Health Service these problems were discussed, and it was mutually agreed that the effect of these two policies on medical education would be dangerous in terms of production of physicians, continued existence of the medical schools, and the effects on public health.

"On April 12, at the suggestion of the Procurement and Assignment Service, recommendations were made by Mr. Paul V. McNutt, chairman of the War Manpower Commission, to Maj. Gen. Lewis B. Hershey, director of Selective Service, embodying the objections and apprehensions of the Procurement and Assignment Service to this program.

"On April 15 a reply from General Hershey indicated that ' . . . No exceptions will be made as respects the date of July 1. We shall, as in the past, give full faith and credit to the certificates of professional colleges as to the status of students matriculated therein and engaged in actual classroom work within the school or under its immediate supervision. . . . '

"On April 26 a communication was forwarded by Mr. McNutt to the Secretary of War and to the Secretary of the Navy, urging the armed services to provide some status for a sufficient number of students to fill the entering classes in medical schools.

"On April 28 discussions were held by the directing board at one of its regular meetings with rep-

resentatives of the War Department, and these apprehensions were stated to them and discussed with them.

"On May 8 a discussion was held with Mr. James V. Byrnes, director of war mobilization, concerning this whole situation, and it was his opinion that since this matter under the law was entirely in the hands of Selective Service it was not within his province to take any action in this matter.

"On May 16 the Secretary of War and the Secretary of the Navy jointly advised the chairman of the War Manpower Commission that it seemed to them ' . . . that the immediate needs of the war for their (students') services ought not to yield to the prospective use of them as doctors in 1949 or thereafter, particularly when it is to be expected that the course of the war will by then make it possible to release many doctors at present in the military service. The action of the director of Selective Service in refusing these deferments was, therefore, in accord with the recommendations of the departments, and for them now to put these students into inactive reserve status would, in effect, be to defer them and to nullify the action of the director of Selective Service which we supported. . . . '

"This now brings the matter up to date, and in the accompanying table is submitted an estimate of what the status of medical classes will be under the program as it now exists.

#### "ESTIMATES OF MEDICAL STUDENTS FOR 1945

Total number of places in entering classes.....	6,440
Army students, 28 per cent.....	1,790
Navy students, 25 per cent.....	1,540
Balance to be filled by women and by men disqualified for general military service.....	3,110"

A proposal to supply qualified premedical students from men now in the armed forces who had previously been engaged in a course of premedical study and who, in addition, had already completed at least a year of military service does not seem to have a great deal to commend it except that it would be legally correct. It would, as pointed out in the *Journal of the American Medical Association*, involve picking out young men from remote areas and leave the selection of medical students to the Army. This does not seem to us to be desirable for many reasons, nor does it appear to us that the Army is particularly well qualified to fulfill this function. The *J.A.M.A.* rightly points out, editorially,

"About 3,500 doctors die each year in the United States. If the armed forces are to take 3,330 out of



6,440 in each medical class, leaving the balance of 3,110 to be filled by women and physically defective men, the situation five years from now will be hazardous. There will be an actual deficit of physicians coming into the profession each year. . . ."

Undoubtedly, some men will be released from the armed forces between now and 1949. How many and in what physical and emotional condition it is impossible to predict. In the same period of time many questions of vital importance will have to be answered.

"Where will our hospitals secure interns and residents? Where will the specialist branches in medicine secure the men who will be willing to undergo three to five years of additional training to qualify? Who will take care of the veterans in the greatly expanded medical care program of the Veterans Administration? Who will supply the needs of our allies and, particularly, the people of the liberated countries, where medical schools have been closed and physicians taken as prisoners to take care of the laborers from their own countries deported into Germany? What about the great program of extension of advanced medical education to our neighbors in South America? What about the tremendous needs of China for modern medical aid, which is so strongly emphasized by all of the leaders of our government? At a time when the whole world is confronted with a need for well-trained physicians as never before, American officialdom is apparently willing to cut off the supply at its very source."

Support for the suggestion that young men be returned as students who have had a year of military service is not lacking within the profession and in allied professions.

"The situation has been complicated by the fact that a committee representing the Council of the Association of American Medical Colleges and another representing the American Dental Association have agreed with the director of the Selective Service System that the taking of young men from the armed forces after they have completed at least a year of military service will be a satisfactory solution to the problem. From this agreement the Directing Board of the Procurement and Assignment Service, the Council on Medical Education and Hospitals, and many leaders in medical education strongly dissent. . . .

"The Council on Medical Education and Hospitals is convinced that the plan cannot insure an adequate supply of qualified medical students. The argument has been offered that the Selective Service System was able to carry out a similar program successfully for the supplying of coal miners

and copper miners. Any one familiar with the requirements in the field of premedical education will realize that there can be no analogy between these two situations. The continuing production of physicians of a high standard of education should have precedence because of the fundamental demand for such services at all times by the armed forces and because the needs of our civilian population now and in the future cannot be met by the education of men who are physically substandard and of women. It is, to say the least, uneconomical to spend the time, the effort, and the money necessary to put a boy through a premedical course, a medical course, and an internship when his physical condition is such as to indicate a lessened life expectancy and the possibility of invalidism in the future. Ten years of service to the people at the end of his career will be of far more value from every possible point of view than ten years at the beginning.

"Certainly this problem is one to which the House of Delegates of the American Medical Association should give most careful and serious consideration. . . .

"By June, 1944, young men now engaged in premedical education will begin to be inducted into the service. Letters pour into the headquarters office of the American Medical Association from leaders in education, from physicians and from citizens everywhere, urging that everything possible be done to halt this folly."

Halting "this folly" may not be a simple matter or even possible of accomplishment at all under the conditions prescribed by the Selective Service Law. France, in 1914, under its law requiring universal military service, was faced with a similar situation, and had to release many men from military service under circumstances far easier of accomplishment than these with which we would be confronted; with results in our recollection, which were far from satisfactory. Civilian medical care deteriorated then dangerously. Can we afford to have that happen here?

Some solution must necessarily be found which will not lower standards of acceptance for medical students nor create a group exempt from military service. In the present circumstances and under existing law the proposal of the director of the Selective Service System with the concurrence of a committee representing the Council of the Association of American Medical Colleges carries, of course, a good deal of weight without being necessarily the final word on the subject.

The House of Delegates of the A.M.A., at its session on June 12, 1944, adopted the following resolution:

"WHEREAS, the present policy of the Army and the Selective Service System in preventing the enrollment of a sufficient number of qualified medical students will inevitably result in an over-all shortage of qualified physicians with imminent

danger to the health and well-being of our citizens, therefore be it

"Resolved, that it is imperative that immediate action be taken by the President or the Congress of the United States to correct the current drastic regulations which result in a restriction of the number of students qualified to enter the courses of medical instruction in approved medical schools."

<sup>1</sup> J.A.M.A. 125: No. 6: 434 (June 10) 1944.

<sup>2</sup> *Ibid.*, p. 430.

## Red Cell Reinfusion

Blood plasma is a vitally precious fluid these days. Not only is plasma used on a vast scale in military and civilian surgical and medical emergencies, but an additional demand on the available supply has been created by immunologists. Since it has been demonstrated that antibodies are most probably modified globulin,<sup>1</sup> it naturally follows that this globulin fraction of serum will be fractionated from adult plasma for prophylaxis or perhaps even treatment against certain contagions, such as measles, against which the great majority of adults are normally immune.

Such preparations of "immune adult globulin" have been successfully tested and are on the verge of widespread commercial preparation. They have the great advantage of concentration, which means much larger dosage per unit of volume, making for greater efficacy and ease of injection. This plasma extract, however, in turn creates another problem—how to increase the supply of plasma.

The factor limiting the frequency of blood donation is not regeneration of the lost serum protein but of the lost red blood cells. Deprivation of 500 cc. of blood entails a loss of 70–75 Gm. of hemoglobin, but of only about 17.5 Gm. of plasma protein. An interval of about eight to ten weeks between blood donations to permit adequate replacement of the lost hemoglobin is generally recommended by recent workers in this field.<sup>2</sup> The rapidity of the generation of serum protein is strikingly greater, for investigation has revealed a very high capacity of serum protein regeneration in a normal individual. The 17.5

Gm. of serum protein can normally be replaced in a matter of days rather than weeks.<sup>3</sup> Based upon these facts, the idea of reinfusing the usually discarded erythrocytes, with a valuable content of hemoglobin so difficult of replacement, came to a group of workers<sup>4</sup> as a solution to the bottleneck preventing frequent and repeated blood donations. Reinfusion, so employed within twenty-four to forty-eight hours, resulted in no anemia, no loss of blood volume, little decrease of serum protein, no alteration of the serum albumin-globulin ratio, no increase of bilirubin.

There was also no increase of reticulocytes and no evidence of red blood cell fragmentation.

No longer need the rate of hemoglobin regeneration serve as the criterion of frequency of plasma donation. The return of the plasma protein to the normal level should be the guide for determining the frequency of plasma donation, provided the separated red blood cells are reinfused into the donor. Further studies are in progress to confirm the laboratory and clinical features of this valuable innovation which will permit a much greater exploitation of the properties of human plasma without detriment to those who proffer full-sized and repeated donations of blood.

<sup>1</sup> Cannon, P. R.: J. Immunol. 44: 107 (June) 1942.

<sup>2</sup> Fowler, W. M., and Barer, A. P.: J.A.M.A. 118: 421 (Feb. 7) 1942; Alstead, S.: Lancet 1: 424 (Apr. 3) 1943.

<sup>3</sup> Madden, S. C., and Whipple, G. H.: Physiol. Rev. 20: 194 (Jan.) 1940; Weech, A. A.: Bull. Johns Hopkins Hosp. 70: 157 (Feb.) 1942.

<sup>4</sup> Tui, C., Bartter, F. C., Wright, A. M., and Holt, R. B.: J. A.M.A. 124: 331 (Feb. 5) 1944.

# NEPHROPTOSIS AND NEPHROPEXY

## A Critical Review of 55 Cases

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THE abnormally mobile kidney has been recognized as being productive of symptoms for many centuries, the earliest references to this condition having been found among the writings of Meuse, of Venice, in 1497. Other sporadic references were found subsequently, but it remained for Rayer's classic contribution in 1841 and Dietl's graphic description of symptomatology referable to this problem to focus attention upon the abnormally movable kidney as a relatively frequent occurrence. Surgical therapy was soon applied and we find that the first deliberate attempt at suspension of the kidney was done in Berlin in 1881 by Hahn.

In the western world Robert Weir, in 1882, was the first surgeon to perform such an operation. A wave of enthusiasm for this operative procedure followed during the next thirty years and because many of these operations were done almost as a fad, the diagnosis of nephroptosis and the operation of nephropexy fell into great disrepute. Thus, suspension of the kidney was within a short period highly acclaimed and abused. The discredit heaped upon nephropexy caused surgical neglect of many patients to whom such relief was necessary. It has only been within the last quarter of a century that the operation has been reevaluated and properly applied. The tendency at present is to regard nephropexy as a valuable tool in the armamentarium of the urologist, but to limit it to cases where definite indications exist for its use. By no means do all cases of excessive mobility of the kidney require renal elevation and fixation.

It is the purpose of this communication to review a series of 55 cases of nephroptosis treated surgically in the past decade at the New York Post-Graduate Hospital. It must be emphasized that many more cases of abnormally movable kidney than the number reviewed were seen, but the operation was limited to certain specific cases where certain criteria were satisfied.

### Definition

It must be borne in mind that the normal kidney has a range of motion of from 2 to 5 cm. on deep respiration and that in the thin individual the lower pole of the right kidney can generally

be palpated without great difficulty. The term movable kidney is here applied to renal mobility which exceeds the limits given above. A low kidney per se is not necessarily one which may be termed "abnormally mobile," for the displaced kidney may be associated with a generalized visceroptosis, and the low kidney is therefore not a specific single finding. A theory which has been propounded by a number of outstanding urologists and surgeons to explain the true excess mobility of the ptotic kidney is that there is a defect in the lower segment of the perirenal (Gerota's) fascia which permits the kidney to slip down when the individual is erect. This view would regard nephroptosis as a herniation of the kidney similar perhaps to the condition existing in the inguinal region where the viscera may descend through a defect in the abdominal wall.

The pathophysiology of the symptomatology in the syndrome of the ptosed kidney is dependent upon a number of factors which may operate individually or in combination:

1. The dislocated kidney causes tension upon and torsion of the renal pedicle, thus interfering with the normal blood flow through the kidney. This results in turgescence of the kidney, overdistension with blood, and increased intracapsular tension within the kidney, thus producing renal pain. This may be of such severity as to be termed renal colic, depending upon the rapidity of increase of the intracapsular distension and interference with the blood supply.

2. The sympathetic nervous system is affected by the constant pull and a situation of excessive sympathetic stimulation results. It is well known that the sympathetic nervous systems of the gastrointestinal tract, the ovary, and the uterus are intimately related to that of the ureter. This interrelationship may account for many of the more obscure abdominal and "neurasthenic" symptoms found in cases of nephroptosis. Moreover, the abnormally low kidney produces a direct pull upon the adrenal gland itself, producing changes within this gland and thus indirectly affecting the sympathetic nervous system and perhaps the hormonal balance.

3. The abnormally mobile kidney produces a constant drag on the intestines; barium studies show a definite sagging of the midportion of the duodenum where the right kidney is ptosed and the splenic flexure is similarly affected where the

left kidney is involved in the abnormal mobility. These effects are dependent upon the anatomic support of the kidney which is in part supplied by the peritoneal attachments and also the ligamentous bands to the duodenum, liver, pancreas, and spleen. It can readily be seen that gastrointestinal symptoms may therefore be a consequence of the nephroptosis.

4. Ureteral kink may be produced by the sagging of the kidney. This in itself is of no significance unless it causes obstruction to the urinary outflow with resultant caliectasis, pyelectasis, and hydronephrosis. Distension of the kidney produced in this fashion makes for increased intracapsular tension and the concomitant renal pain. To our way of thinking this factor is most important in the production of urinary tract pain; the stasis of urine induced by the obstruction predisposes to superimposition of infection and calculus formation. It is also our opinion that the demonstration of obstruction due to ureteral kink and the associated changes resulting from back pressure are positive indications for surgery though symptoms may be minimal. Such surgical therapy will often enable one to prevent progressive destruction of the kidney, which is bound to occur if the obstruction to urinary outflow from the pelvis is not overcome.

### Symptoms

These various factors are probably the basis for the differentiation of several groups of symptoms which are found as characteristic of the abnormally mobile kidney:

1. Symptoms referable to the urinary tract. These are most frequent. Pain may range from acute colic to constant nagging or dragging flank pain. Bladder symptoms may also be present and may include frequency, urgency, dysuria, and nocturia. Several of these symptoms, of course, may depend upon urinary infection, which is present in a considerable number of cases, stasis in the kidney acting as the underlying factor. A number of cases in our series also had calculus formation, and renal irritation due to presence of the calculus also contributed to the urinary symptoms.

2. Gastrointestinal symptoms are not infrequent. Nausea and vomiting with vague abdominal pains may lead to such operations as appendectomy or cholecystectomy to no avail in the relief of the patient's complaints.

3. Frequently associated with the above symptoms are such indeterminate "neurasthenic" complaints as fleeting aches and pains, nervousness, a feeling of ill-being, and similar indefinite statements which often make one regard the patient as a crank and an hypochondriac. Such

symptoms may be due to the sympathetic nervous system imbalance produced by pull of the displaced kidney.

### Analysis of Cases

This series comprises the 55 cases of nephroptosis seen at the New York Post-Graduate Hospital from 1933 to 1943 in which surgical suspension of the kidney was deemed warrantable. While many other cases of malposed kidneys were examined and treated, these did not meet the requisite specifications for operative intervention and are therefore excluded from consideration in this analysis. Appraisal is restricted rather to those patients whose histories and symptomatology demanded serious therapeutic effort.

Of the entire group upon whom surgery was performed, 42, or 67 per cent, were males. There was considerable variation in age range; with the single exception of a child of 4 who was operated upon, the age of the patients varied from 19 to 65. The largest fraction, however, 18 patients, were in the fourth decade of life. Twelve patients were in their twenties, while the age of 11 patients was between 40 and 50. These statistics correspond to the incidence reported in various studies from other hospitals throughout the world.

In 83 per cent of the cases renal displacement was on the right side and in only 13 per cent on the left. Bilateral involvement occurred in 2 cases.

The cardinal complaint of 54 patients was pain. One man who coincidentally had renal lithiasis was admitted to the hospital because of hematuria alone. The intensity of the pain varied from excruciating colic to moderate or dull ache. In 18 per cent the distress was described as severe intermittent attacks originating in the region of the costovertebral angle and radiating along the course of the ureter. Thirty per cent of the patients had lumbar pain of varying degree while 34 per cent complained of annoying, aching sensation confined to the flank. In the remaining cases the presenting symptoms were variable, ranging from perineal pain to epigastric distress, including low backache with upper and lower abdominal pain. Nausea and vomiting were included among the symptoms of 10 patients. Two of these had history of preceding appendectomy and four had been operated upon for gallbladder disease without alleviation of their ailments.

Hematuria was detected in five instances, in three of which associated lithiasis was established. The cause of bleeding in the other 2 cases was not discovered.

The occasional occurrence of bladder symptoms in the presence of renal ptosis is well known and

was part of the clinical picture of 20 per cent of our series. In all, frequency of micturition was the outstanding symptom with urgency being the next most evident complaint. Dysuria was present in 6 cases and nocturia in 2.

General toxemia of greater or less degree was a common finding, but only 6 per cent had chills and fever and 12 per cent had fever alone. Nervous excitability and mental tension were present in most cases.

There was considerable range in the duration of symptoms suffered by the patients before operation was performed. The shortest interval between the onset of illness and surgery in the entire group was two weeks, while the longest period of preoperative distress was twenty-four years. Within these limits there was wide variation. Careful survey indicates, however, that in 40 per cent symptoms were present from one to three years. Twenty-nine per cent were selected for operation less than twelve months after the initial observation of pain while 15 per cent had suffered for more than five years. In 22 per cent urologic intervention was precipitated by the appearance of signs referable to associated disease.

Urinalysis affords little assistance in establishing a diagnosis. Church states that albuminuria is almost a constant finding in renal ptosis. Of the 55 cases reviewed, pyuria was discovered in 43 per cent. Positive urine cultures were found after complete urologic investigation in 16 cases. Of these the right kidney alone accounted for 11, the left for 2, with bilateral involvement discovered in 3. Bacterial growth was discovered in the bladder urine of 12 patients. *Escherichia coli*, the most common offender, was isolated in 70 per cent of the infected cases, while *Staphylococcus albus* and nonhemolytic streptococci were cultured from a smaller number. In 5 per cent uncommon bacterial agents were found, these were *Bacillus pyocyaneus* and *B. proteus*. Twenty per cent of the involved cases had mixed infections. The statistics thus reported lend credence to the impression generally held that the

fixed or subsequent stasis, predisposes to infection of the urinary tract.

The most important feature of physical examination in the diagnosis of nephroptosis was found to be abdominal palpation. Palpable kidneys were discovered in 32 per cent of the cases, 25 per cent on the right side and 7 per cent on the left. Bilateral ptosis was revealed in 5 per cent of the entire series. Pain and tenderness either in the renal area or in the flank are of decided significance in establishing indication for surgical relief. These findings were present in varying degree in 29 patients. It is of interest to

note that in all instances where tender, palpable kidneys were manifested on physical examination, symptoms had been present for longer than two years.

As is indisputably recognized, the preoperative diagnosis of movable kidney or kidneys can only be made with absolute certainty by the use of excretory or retrograde pyelography involving exposures with the patient in the prone and erect or semierect positions. The radiographic findings in the current series are summarized in the accompanying table. Severe renal dislocation could be demonstrated in 38 per cent of the cases with moderate alteration in position in 62 per cent. It was possible to visualize roentgenographically ureteral tortuosity and kinks in 76 per cent of the patients examined (see Table 1).

TABLE 1

Side	Degree of Ptosis	Ureter Kink	Associated Stricture	Dilatation of Pelvis	Calyces
Right	54%	32%	66%	25%	62%
Left	8%	0%	10%	3%	2%

### Analysis of Pyelographic Studies

Structural as well as positional change in the ureter was revealed by the presence of stricture at the ureteropelvic junction in 28 per cent. Representing a manifestation of obstruction, pyelectasis was demonstrated in 67 per cent with further distention of the calyces in approximately half of these cases.

Nephroptosis with its variegated implications and predispositions engenders a number of associated renal diseases. In most instances, the precedence of excessive renal mobility to the allied kidney condition is clearly established, in other cases ptosis is first noted by the appearance of signs or symptoms referable to the complicating lesion. Associated renal disease of any sort was found in 67 per cent of the patients. Nephrolithiasis was diagnosed in 8 cases, in 3 of which ptosis was discovered only incidentally. In 14 per cent of the series, true hydronephrosis, as distinguished from the degree of dilatation signified by the terms pyelectasis and caliectasis, was demonstrated. The role of urinary infection in relation to the ptotic kidney has already been considered. Actual pyelonephritis, as demonstrated by morphologic alteration visualized in roentgenographic studies, occurred in 5 cases. In 28 per cent of the series, concurrent constriction at the ureteropelvic junction was recognized. Congenital anomalies were present in 4 cases.

### Methods

Though the various technics of suspending the

kidney differ, they have aims in common. Of necessity, each method of nephropexy must fix the kidney as high as possible, but at the same time must attain and maintain the normal relationship of ureter and kidney pelvis so as to facilitate drainage. In other words, not only is anatomic reposition essential, but normal physiologic function is a prime requisite. Moreover, any such method must not be so technical as to preclude its widespread use, nor must it produce damage to the renal substance. The numbers and types of nephropexy are legion; we hold no particular brief for any particular procedure but it is obvious that the most simple operation which attains the above objects is to be preferred. Different methods have been employed by individual surgeons in the cases described in this communication, but we ourselves use a method which has been adequately presented and illustrated by Woodruff. This, in essence, consists of denuding a portion of the posterior surface of the kidney of its capsule and approximating this area to the under surface of the lowermost ribs. Suture of the perirenal fascia and fat to the lumbar muscles below the kidney is also performed, as suggested by Deming.

If is, of course, well known that widespread and tenacious adhesions are found in reoperating on a kidney which has previously been surgically exposed. It would appear then that sufficiently dense adhesions will form to keep the kidney suspended no matter what method of nephropexy is employed, just so long as the technic fixes the kidney in its high position long enough to permit the formation of these adhesions.

It should be apparent from this that failures in surgical treatment of nephroptosis are generally *not* due to faulty surgery and poor technical procedure, but are due rather to the lack of recognition of associated pathologic lesions which demand correction, or to the improper choice of cases. As we have seen, the abnormally mobile kidney is frequently attended by concomitant pathologic lesions, particularly at the ureteropelvic junction; any procedure which aims merely at pegging this kidney will of course be followed by inevitable failure, for correction of the accompanying lesion is a *sine qua non* of success. In fact, in many cases without any symptoms at all, an unusual degree of renal mobility is found, yet the kidney empties normally. Thus where symptoms do exist with a ptotic kidney, exhaustive search must be made for the presence of accompanying lesions if the corrective surgery is to have any measure of success.

Adequate follow-up studies were carried out in 40 patients of whom 27 acknowledged subjective cure by the operation (see Table 2). Seven patients stated that, while some symptoms were

TABLE 2.—ANALYSIS OF END RESULTS

Side	Cases Followed	Complete Relief of Symptoms	Persistent Symptoms		X-Ray Findings Dilatation or Kink	X-Ray Findings	
			Severe	Mild		Good Position	Bad Position
Right	34	70%	15%	15%	8	22	3
Left	6	50%	12%	33%	1	4	1

either constantly or intermittently present, their general condition indicated improvement over the preoperative status. In one unusual case nephropexy effected alleviation of contralateral pain. In 15 per cent of the followed cases unsatisfactory results were obtained. Interview with these patients revealed that symptomatic relief of preoperative complaints, if at all noted, was transient and that surgery had afforded no significant amelioration of subjective distress. In one instance subsequent nephrectomy was necessary. Roentgenographic follow-up was accomplished in 30 cases. Of these, pyelography revealed anatomic correction in 26 with renal malposition persisting in 4 cases. Pelvic or calyceal dilatation or ureteral kink was demonstrated as persisting postoperatively in 9 cases.

### Comment

Survey of 55 cases of nephroptosis deemed suitable for surgical suspension has brought to our attention certain specific deductions:

1. Operation solely for the purpose of correcting excessive renal mobility in the absence of symptoms or stasis is not warranted.
2. The performance of nephropexy *per se* without correction of concomitant renal or ureteropelvic lesions is doomed to failure. As a corollary to this consideration, it must be emphasized that search for associated disease of the kidney or ureteropelvic junction must not be neglected even where simple ptosis appears to reveal the clinical picture by itself.
3. A properly performed nephropexy not only demands suspension in a high position but also requires fixation so that the proper renal axis is achieved. This is obviously necessary for adequate drainage of the kidney pelvis.
4. For final estimation of ultimate result, *urographic evidence*, in addition to subjective improvement, must be weighed.
5. While the efficacy of nephropexy as a tool in the armamentarium of the urologic surgeon is not to be minimized, indiscriminate employment of this procedure on all palpable kidneys is ill-advised.

From the above considerations it is possible to evolve a set of criteria establishing specific

indications for fixation of the kidney. In the interpretation of cases suitable for nephropexy where a careful history, physical examination, and urologic study have been made, emphasis must be placed on the following facts:

1. It must be definitely established that symptoms are referable to the urinary tract. Investigation of nonurinary symptoms such as gastrointestinal distress must be complete before such symptoms are attributed to the abnormally mobile kidney.

2. Excessive renal mobility must be demonstrated by urographic procedures in both the erect and recumbent posture. The descent of the kidney in the upright position must exceed those limits generally regarded as normal, since a certain minimal mobility is usual anatomically. Serial pyelography as advocated by Henline affords corroboratory evidence, but is by no means essential to the diagnosis.

3. Simulation of pain by overdistention of the pelvis on the affected side through retrograde catheterization is a helpful but by no means essential diagnostic criterion. Renal displacement, despite the absence of evidence of constant obstruction to urinary outflow, may require fixation of the kidney because of frequency and severity of pain, as occurs in repeated Dietl's crises.

4. Where infection is present and yet no stasis can be demonstrated conservative measures directed at the infection should be attempted first.

5. On the other hand, where stasis and obstruction to the urinary outflow are definite, such findings in addition to the ptosis would appear to make the surgical procedure even more imperative.

6. Any attempt at the conservative dismissal of the ptotic kidney presenting definite symptoms and obstructive urinary changes by the use of so called ptosis belts and abdominal supports would seem to be unjustified.

## Summary

This paper presents a study of 55 cases of nephroptosis seen at the New York Post-Graduate Hospital during the past decade. There is an appraisal of the operative procedure of nephropexy in the therapy of the low kidney and associated renal disease. Criteria are established for performing surgical intervention with a consideration of the technics employed. Follow-up studies are critically analyzed.

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## CHEMOTHERAPY IN TUBERCULOSIS

Promin, diasone, promizole, and certain other related compounds appear to possess in varying degree the ability to restrain development of experimentally induced tuberculosis in guinea pigs. It is recognized that this offers many contracts with

able are as yet inadequate both quantitatively and qualitatively to permit, even tentatively, a positive evaluation of the curative effects of such drugs upon tuberculosis in human beings. Until controlled studies of adequate scope have been reported it is recommended that none of these drugs be used for treating tuberculous patients except under conditions which will add to our knowledge of their clinical action, and in the presence of adequate facilities

to protect patients effectively from their potentially serious toxic effects. Patients and physicians must be reminded of the Federal regulations which prohibit distribution of a drug in the experimental phase of development to other than research institutions to which the material is assigned by the manufacturer for either laboratory or clinical investigation.

Any use of chemotherapeutic agents in the treatment of tuberculous patients must, therefore, be regarded as a purely clinical investigation. It must be emphasized that such use is not without hazard and that the reviewed gives . . . than a critical patients.—Report of Committee on Therapy, American Trudeau Society, Am. Rev. Tuberc., Apr., 1944

# FACIAL PARALYSIS—PROSOPOPLEGIA\*

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THIS presentation is a review of one individual's experience with paralysis of a single cranial nerve in 500 personally studied cases (see Table 1). In every instance the initial approach to these cases was due to the occurrence of a peripheral facial palsy, although in a few instances repeated examinations disclosed other associated neural findings. In order to demarcate the scope of this paper all cases have been eliminated in which, in addition to other findings, there later developed a peripheral facial paralysis.

The term "Bell's palsy" will be reserved for the occurrence of an acute "paralysis of undetermined origin," the connotations derived from its original description by Sir Charles Bell. Of all the causes of paralysis of the seventh cranial nerve, fallopian neuritis is by far the most common.

The seasonal incidence of facial paralysis in this series was as follows: January, 31; February, 28; March, 25; April, 24; May, 22; June, 23; July, 15; August, 9; September, 19; October, 13; November, 22; December, 15.

It is obvious from the above tabulation that there is no predilection for a particular season, although the three cold months of January, February, and March have a total of 84 cases as opposed to 43 observed in July, August, and September, the warm or mild months. It is the opinion of this writer that a particular season has no bearing on the occurrence of a facial paralysis.

Of the 304 cases of Bell's palsy examined in the acute phase of the "rheumatic" there were 153 females and 151 males (see Table 2). The sides involved were: in the females, 70 on the right and 82 on the left; in the males, 83 on the right and 63 on the left.

One hundred and ninety-five, or 63.3 per cent, of all patients are between 10 and 40 years of age, equally divided between the sexes.

## Onset

Although the patient is usually aware of the facial weakness because of a heavy, drawn feeling in the facial muscles, there are many instances in which a friend or relative calls the patient's attention to it because of the lack of expression and contortions in smiling.

Read at the Annual Meeting of the Medical Society of the State of New York, Buffalo, May 5, 1943.

\* The material used in this paper does not include cases encountered in the Naval Service. The opinions expressed are the personal ones of the author.

Often the condition develops during the night, and in the morning the patient first becomes aware of the weakness by shaving, getting soap in the eye, gargling, brushing the teeth, or noticing an inability to spit. Occasionally the victim first becomes conscious of the condition on looking in the mirror. Inability to whistle made one man first aware of it; in another, an expert ear-wiggler, this simian quality was lost. One patient noticed an inability to make a Cupid's bow while applying lipstick. The inability to smile or laugh may first disturb the patient. A flickering of the eyelids or excessive winking may precede the actual weakness. The hostess of one patient excused herself from a guest because on observing the unusual winking of the eyelids she was led to believe that she was about to hear a juicy morsel of gossip.

Excessive salivation was observed in but one case, preceding the paralysis by three days.

See Table 3.

## Symptomatology

In Bell's palsy one encounters a variable symptomatology. The frequency with which the varied symptoms occur is as follows:

	Number	Percentage
Asymptomatic (paralysis only)	90	29.7
Loss of taste	144	47.3
Perversion of taste	110	36.1
Pain commonly retroauricular	123	40.4
Hyperacusis	24	7.8
Tinnitus	13	4.2
Vertigo	6	1.9

*Asymptomatic Cases.*—Only 90 patients (29.2 per cent) were completely free of associated symptoms. Five patients with a story of a previous attack later developed a symptomless second attack. Four were associated with pregnancy; and one had a bilateral involvement. The asymptomatic paralysis shows a tendency to rapid spontaneous recovery. All the patients with this type recovered except one.

This is quite in contrast to the patients with Bell's palsy who later develop a contracted state. Half of 30 patients with an old contracted palsy had no recollection of associated symptoms, while the other 15 recalled pain and taste disturbances at the onset. Also 9 of 10 acute cases, observed from the onset and later found to be contracted, had associated disturbances of pain and taste.

*Hyperacusis.*—Unusual sensitiveness to sounds ordinarily undisturbing was complained of by 24 patients (7.8 per cent). In three instances this



TABLE 1—TOTAL NUMBER OF CASES OF PERIPHERAL FACIAL PARALYSIS—CAUSATIVE CLASSIFICATION

Bell's palsy (acute) 304 of 1 contracted facial palsy 30	334
Mastoid disease	53
	16
	10
	18
Syphilis	10
Herpes (geniculate ganglionitis)	6
Bilateral	6
Acute anterior poliomyelitis	3
Congenital	4
Meni- gitis	3
Tumor of the parotid gland	2
Inflammation—toxic	1
Tumor invading mastoid	1
Operation on parotid gland	1
"	1
"	2
"	1
"	1
"	1
"	6
	500

TABLE 2—BELL'S PALSY

Total Number of Cases	304
Conditions with Which the Acute Rheumatic Type Is Associated	
Pregnancy	21
Syphilis	10
Hypertension	10
Parkinson's disease	2
Epilepsy	2
Hemiplegia	2
Diabetes	1
Contractured state when seen	30
Acute cases developing contracture	10
Recurrences	9
Familial history	6

TABLE 3—AGE OF ONSET IN THE INFLAMMATORY GROUP (DECADE)

	1st	2nd	3rd	4th	5th	6th	7th	8th	9th
Female	11	31	34	32	30	11	9		
Male	9	24	46	28	17	19	7	3	1
Total	20	55	80	60	47	30	12	3	1

was more disagreeable and of greater concern to the patients than the palsy. In 6 patients it was the only symptom other than the palsy.

**Tinnitus**—The buzzing in the ear known as tinnitus was noted in 13 cases (4.2 per cent) and always was associated with retroaural pain, disturbances of taste or hyperacusis. The patients differentiated clearly between sensitiveness to sounds and in annoying buzzing in the ears.

**Vertigo**—Vertigo as a disturbing symptom is uncommon, having occurred in 6 cases. In most instances it antedates the paralysis and is of brief duration although in one instance it lasted for several days and was then followed by the facial paralysis. Four of the patients who suffered from vertigo had an associated disturbance of taste. Only one of this group complained of pain and then it was not the usual type found in the "rheumatic" kind of facial palsy.

There was no associated vascular hypertension, and in no case was there any suggestion of an aural infection. No impairment of hearing was found, and a disturbing tinnitus was noted but once.

**Case 1**—R. S., a woman of 52, had left facial paralysis. Her symptoms were suggestive of a possible labyrinthitis. Three weeks prior to the onset she had had a severe attack of vertigo, spinning around like a top and falling. Facial palsy came on while she was talking to her son. Distinct tinnitus occurred on the following day. The taste disturbance she described as "furry" and "metallic."

**Case 2**—The patient was a woman of 38 who complained of right facial paralysis. She noticed severe vertigo lasting all one day, and late in the afternoon she observed awkwardness in trying to drink a glass of water. Her taste was disturbed.

Testing showed a loss of taste. It was noticed that she breathed better through the left nostril.

**Case 3**—A man of 36 had left facial paralysis with severe vertigo at the onset. His taste was not disturbed subjectively and was intact on testing.

**Case 4**—The patient, a woman of 43, awakened one morning with paralysis. She felt very dizzy, but the dizziness disappeared during the day. Her taste was lost for seven days.

**Case 5**—A young man of 18 had severe symptoms of vertigo and also vomiting. Several days later a complete peripheral facial paralysis developed. The patient recovered.

**Case 6**—A man of 48 noticed right facial paralysis. At the onset he had had a dull pain and a feeling of swelling in the right side of his face. Subsequently he developed marked vertigo and a feeling of uncertainty in walking. He recovered.

**Pain**—Of 122 patients complaining of pain, most volunteered information but some (40 per cent) admitted pain only on questioning.

Of these, 103 patients had localized the pain behind the ear, usually over the mastoid process and in some cases deep between the angle of the jaw and the mastoid process. The retroaural pain usually develops concurrently with the onset of palsy. In 18 cases, the pain antedated the onset of paralysis as follows: in 4 by one day, in 5 by two days, in 2 by three days, in one by four days, in one by five days, and in 3 by seven days.

In two cases the pain was not complained of until after the development of the paralysis, in one patient by one day, and in 2 five days later. Ordinarily the pain gradually wears off after twenty-four hours.

In 19 others the pain was variously located in

TABLE 4.—RECURRENCE OF FACIAL PARALYSIS

Case			First Attack (Side)	Second Attack (Side)	Interval	Race	Remarks
1	F	58	Right	Left	1 month	Colored	Bell's palsy
2	F	64	Right	Left	25 years	White	Right side of face slightly contracted
3	F	81/4	Right	Left	6 years	White	First attack at 2 years—Bell's palsy
4	F	51	Left	Right	16 years	White	First attack—Bell's palsy. Second attack result of hypertension
5	F	60	Right	Left	15 years	White	Bell's palsy
6	F	60	Right	Left	4 years	White	Bell's palsy in second attack
7	M	75	Right	Bilateral	3 years	White	Second attack part of a toxic general peripheral neuritis
8	F	38	Right	Left	10 years	White	Bell's palsy
9	F	28	Right	Right	3 months	White	Recurred in course of 3 months
10	M	28	Left	Left	...	White	Attacks occurred during course of mastoid disease

the face, the angle of the jaw, down the neck, in the occiput, under the ear, and in one case it extended to the shoulder.

Other patients with dominant pain over the mastoid complained of additional pain in the neck, occiput, and face, and in one case in the ipsilateral nostril.

On two occasions patients were awakened at night by the severity of the pain, but in the great majority of the cases the pain is of a tolerable type. Occasionally it is shock-like or like a tooth ache, but most commonly one of a dull soreness. Its sharp localization over the mastoid process resulted on two occasions in operation with the resultant discovery of normal mastoid cells.

In seventy-six cases the pain was associated with a loss of taste sensibility. It was the only associated complaint in thirty-six cases.

**Disturbance of Taste.**—A disturbance of taste is the most common additional symptom, having been noted 144 times, or 47.5 per cent of the patients. As the only additional symptom, it occurred in 54 cases, or 17.7 per cent. It was discovered only on testing in 34 cases, or 11 per cent. In all 110 patients complained of taste disturbances.

In 11 cases there was consciousness of taste perversion and loss—in 3 the night before, in 3 two days before, in 2 the day before, in one three days, and in 2 seven days before the development of the paralysis.

The distortion of taste was variously described as copperish, bitter, sour, like acid, like aluminum, greasy, salty.

Although taste is not the most highly developed of the human senses, the loss of taste was recognized in 87 per cent of individuals affected. The fact that a perversion of taste occurred prior to the actual palsy is a point in favor of a progressive inflammatory agent, the taste perversion being a result of irritation of the chorda tympani nerve.

### Family History

In six of the cases there was a history of a

similar type of paralysis in another member of the family—all suffering from Bell's palsy.

The daughter of a woman of 42 with paralysis on the right side of the face also had it on the same side. Another woman of 18 with a right-sided paralysis had a sister who had been paralyzed at the same site several years before. One year previously the daughter of a woman patient 55 years old had developed facial paralysis on the same side as her mother. One patient had a brother who had had paralysis two years before and a sister three years before. The father of a 48-year-old man patient had had two attacks—the second at 81 years, just preceding the attack in the patient. The mother of still another patient of 43 had had a similar type of attack at 44 years.

The occurrence of a facial paralysis in several members of a family in so few cases (1 per cent) can hardly be advanced as an argument in favor of familial susceptibility. Its chance occurrence in a family serves rather as an indication of the frequency with which this nerve is implicated.

### Recurrence of Paralysis

In 1935 a series of 19 patients with a story of recurring attacks of facial paralysis was reported, of which 5 patients were observed in both attacks.

Since then 10 other patients have been observed in whom a second palsy developed.

The occurrence of a facial paralysis is apparently an unforgettable experience, as most patients recall, without prompting, the details of their initial attack. The frequency of a recurrence in a fallopian neuritis remains slightly over 7 per cent—23 of 304 cases with a history of Bell's palsy. In one the second attack was the result of a spontaneous aqueductal hemorrhage in vascular hypertension. In another there was a recurrence of bilateral facial paralysis, the result of a generalized toxic neuritis, all four extremities being involved also.

An unusual recurrence was observed in a pa-

TABLE 5.—FACIAL PARALYSIS ASSOCIATED WITH PREGNANCY

Case	Age	Pregnancy	Antepartum		Postpartum	Side	Blood Pressure	Month of Year	Result
			Months	Days					
1	35	....	0	26	.	Left	Normal	11	Recovered
2	23	Second	.		9 days	Right	Normal	2	Recovered
3	24	First	.		3 days	Right	Normal	12	.
4	30	Fourth	.		13 days	Left	Normal	12	...
5	24	First	8 1/2		...	Left	Normal	.	...
6	18	First	8			Left	Normal	6	...
7	22	First	1			Right	Normal	.	Contracture
8	18	First	6			Left	Normal	.	Recovered
9	30	First	6			Left	Normal	.	Contracture
10	17	First	.		1 day	Left	Normal	.	Contracture
11	18	First	9	11		Left	Normal	3	.
12	32	..	8			Right	Normal	3	.
13	24	.	.		3 days	Right	Normal	.	...
14	36	Fourth	.		3 days	Left	Normal	11	Recovered
15	23	First	.		9 days	Right	Normal	.	Recovered
16	35	.	9	0		Left	.	11	.
17	37	.	.		2 days	Right	Normal	.	Died of cancer
18	26	First	9	2		.	.	12	.
19	42	Tenth	.			Left	230/140	.	Typical Bell's palsy
20	25	First	8 1/2			Right	.	3	Recovered
21	22	First	9			Right	Normal	1	Disturbance in taste, pain

tient with otitis media and mastoid disease. This patient, who suffered from a chronic discharging ear, developed in its course a facial palsy for which at that time a simple mastoidectomy was done. The face recovered in three weeks.

However, the aural discharge persisted, the facial palsy recurred, and eight weeks later a second operation was performed. Following the second operation the paralysis persisted without improvement for eight months.

See Table 4.

### Facial Paralysis Associated with Pregnancy

Twenty-one, or 40 per cent, of the cases were associated with pregnancy, and in one half of the cases it occurred in the first pregnancy. With the exception of three instances, all occurred in the latter part of pregnancy or shortly after delivery. There were 4 in the eighth month, and 6 in the ninth month before parturition, while 8 developed from one to nine days postpartum.

In all of the patients a typical story of the onset of Bell's palsy was elicited, there being no suggestion of a toxic factor. In one patient a vascular hypertension was found, but in this case a story of sharply localized retro-aural pain of an unusual length of fourteen days was obtained.

The concurrence of a Bell's palsy and pregnancy is of interest purely because of the apprehension it arouses in the patient, and at times in the attending physician. There is no logical explanation for this neural complication of a normal physiologic process. Its actual occurrence in this state is rather infrequent—only seven times in 27,243 deliveries in fifteen years on a single hospital maternity service.\* Of 304 cases of pure Bell's Palsy, 153 occurred in women (50%).

\* Methodist Episcopal Hospital, Brooklyn, New York.

### Etiology

Exposure or "refrigeration" has long been suspected as a causative agent.

In the experiences of this observer this theory of "refrigeration" would seem to be exploded by its infrequent occurrence, 13 patients only having provided a story indicating that they felt they had been exposed to a draft. Some of the reasons were unusual. They included "sleeping near an open window in August," "taking a bath the night before," "going without a hat," or "an auto ride in June."

Although the cold months should be more favorable, the cases supposedly caused by "exposure" do not necessarily develop in the cold period. Also if but 4 per cent have just a suspicion of "refrigeration," it cannot logically be regarded as a direct cause.

The cases are so few that they may be recorded briefly here.

*Case 1.*—A taxi driver first noticed a paralysis of the right side of his face when he was unable to expectorate through his open taxi window with his usual proficiency. It was September, and the left side of the face was the half exposed to a breeze while he was driving in his taxicab.

*Case 2.*—A woman, aged 31, felt that she was exposed to the cold on a damp, cold February day. She had retro-aural pain, tinnitus, and taste disturbance.

*Case 3.*—A man, aged 48, claimed that he was exposed to the cold on a cold day in December, although he had never been disturbed by equally cold weather.

*Case 4.*—A woman, aged 32, stated that she went out in the open air without a hat on a cold January day.

*Case 5.*—A girl, aged 12, had a swollen ankle four weeks before onset. Her mother attributed the paralysis to the fact that she had taken a bath at night just preceding the onset, in the month of June.

*Case 6.*—A woman, aged 21, attributed the onset of her paralysis to an automobile ride in June. The following day she observed pain in the left ear, and a day later a facial paralysis.

*Case 7.*—A boy, aged 18, felt that he had been exposed to the cold air on board ship.

*Case 8.*—A woman aged 18, sat in a draft at the movies. She noticed that her face felt swollen. Paralysis was present the following morning.

*Case 9.*—A girl, aged 11, had paralysis, which her mother felt had resulted from riding in a car in July, sitting in a draft in a theater, and going in swimming all in the same day.

*Case 10.*—A woman, aged 20, also claimed she sat in a draft in the theater.

*Case 11.*—A man, aged 26, in August slept all night with windows open.

*Case 12.*—A woman, aged 53, felt that she was exposed while on a boat trip in the month of April.

*Case 13.*—The single instance which could possibly be explained on the basis of exposure occurred in the following case:

A boy, aged 14, whose family was unable to procure a radio for him, used to sit night after night with his face glued against an intervening wall listening to a neighbor's radio. Although this was a nightly occurrence even in the cold months, it was in the warm month of July that a facial paralysis occurred on the side of his face which had been pressed against the wall.

The facial nerve is not more exposed to the outside world than any other nerve. At one point only is there a weakness in the protective armor and that involves one of its branches, the chorda tympani, which crosses the tympanic drum membrane. In a sense this nerve is just as exposed to potential infection as it is to "cold" as an agent.

In many cases there is a resemblance in the story to the cases of geniculate herpes. This is more so when the pain is widely diffused and not sharply localized over the mastoid process, and also when it occurs deep in the ear or anterior to the ear, spreading into the face. Even though herpetic vesicles cannot be found in these cases, a suspicion of a herpes virus (herpes zoster oticus) must be entertained.

The actual cause of the acute rheumatic type remains beclouded. The ease with which this nerve is involved in specific types of acute infection of the nervous system which are readily accepted as causes because the relationship seems clear-cut, indicates perhaps the intrinsic susceptibility of the facial nerve to other causes not so tangible or so easily proved. This relationship is particularly true of virus infection. In the series the onset followed the removal of an infected tooth, badly infected tonsils, and an attack of quinsy. Unfortunately, in the vast majority of cases there is no suspicion of illness, the patient being otherwise in excellent health.

In two instances only did the patients complain of headache.

It is the feeling of the writer that the cause of Bell's palsy is an infection—chiefly because of the associated pain and taste disturbances, both of which may precede the actual paralysis for days. A virus is the possible causative agent and may be related to that of herpes.

The frequency of paralysis is undoubtedly related to the unusually tortuous course of the seventh cranial nerve, rendering it readily susceptible to various types of injury and disease processes. It may be observed at birth and noted at an advanced age without favor to sex or race.

*Syphilis.*—All the patients with syphilis were examined because of the conspicuous features of the facial palsy, other findings being elicited in the course of a routine examination or revealed at a later period. There were 19 patients in whom the seventh cranial nerve was implicated in the presence of serologic or clinical proofs of syphilis. Of these, 10 cases of palsy were attributed directly to syphilis because of involvement of the adjacent cranial nerve, or positive changes in the cerebrospinal fluid with a paralysis of a pure motor type. The remaining 9 were those of a typical Bell's palsy occurring by chance in a patient who happened to have syphilis. Of the 10 cases caused by syphilis one remained throughout its course as an isolated paralysis without other cranial nerve involvement or neural changes elsewhere.

This patient, a man, aged 27, developed a left facial paralysis progressively over a few days. There was no pain, subjective or objective disturbances of taste, tinnitus, vertigo, or impairment of hearing. Clinical examination disclosed a 4 plus blood Wassermann with 350 lymphocytes and a 3 plus Wassermann in the cerebrospinal fluid. No evidence of internal hydrocephalus was found.

*Congenital.*—In rare instances the paralysis may be noted at birth independent of known causes such as syphilis or trauma caused by obstetric forceps. Four, or less than 1 per cent of the cases, were observed to be of this type.

The presumptive cause in the real congenital type is a nuclear agenesis, not inconsistent with embryonic developmental defects. One case examined sixteen years later showed diffuse muscular facial flutterings, observed in the contracted state of facial paralysis.

In 5 there were evidences of an active leptomeningitis, examinations of the cerebrospinal fluid revealing positive Wassermann reactions and a pleocytosis varying from 60 to 350 cells. Two of these cases showed papilledema. Seven cases provided indications of an involvement of the eighth nerve, such as tinnitus, vertigo, and

TABLE 10.—FACIAL ANALYSIS ASSOCIATED WITH SYPHILIS  
Symptoms—Cerebello Pontine Angle

Case	Sex	Age	Site	Hearing Affected	Vertigo	Tinnitus	Ataxia	Blood Wassermann	Spinal Fluid Wassermann	Other Signs of Syphilis—Central Nervous System
1	F	31	Right	Partial—N	*	*	*	2 plus		
2	M	18	Right	Bilateral nerve deafness	Attacks					Argyll Robertson pupils
3	M	37	Left	Nerve deafness		*		4 plus	60 40	Multiple cranial nerve
4	M	27	Right					4 plus	190 4 plus	Right side—abducens
									300	Bilateral papille
	M	13	Right	Complete nerve deafness Recovered	*		*	4 plus	200 4 plus	Bilateral papilledema Recovered
6	M	27	Right					4 plus	30 3 plus	Recoverd
7	M	32	Right	Nerve deafness Recovered				4 plus	60 4 plus	Recoverd
8	M	36	Right	Nerve deafness (of 1)				4 plus		Later Bell's palsy on opposite side
9	F	46	Right					4 plus	4 plus	Fabes
10	M	39	Left	None				4 plus		Optic atrophy

\* Present

impairment of hearing varying from partial to complete deafness, the three exceptions being the isolated palsy, described above. In another there was additional involvement of the homolateral abducens nerve, and the third developed in the course of tabes.

Of the 9 cases in which Bell's palsy occurred in association with serologic or physical signs of neural syphilis (9 cases with 4 plus blood Wassermann reaction) there was one instance of Erb's spastic paraplegia, and one in which there developed four years later a syphilitic spinal thrombosis.

Syphilis as a specific causative agent in these cases was eliminated by the story of retro-aural pain and taste disturbances. In a peripheral facial paralysis of acute onset, syphilis as a causative factor operates through compression of the nerve trunk in its intracranial course as it enters the internal auditory meatus in the company of the eighth nerve. Consequently there is usually an associated involvement of the eighth nerve, with resulting deafness of the nerve type. Although other neighboring signs may be present in the acute fulminating type of case simulating the cerebello pontine angle syndrome, a 'sub-acute' type exists in which the seventh and eighth nerves alone are implicated.

It is just as common for the nerve to be involved in an acute inflammatory fashion coincidental with syphilis as by syphilis alone.

See Table 6

**Mastoid**—Facial paralysis in relation to aural disease disturbs both surgeons and patients. Fifty-three cases in the series were related to a chronic discharging ear. Preoperative onset of the paralysis was observed in 11 patients. Three other patients did not submit to an operation. In one instance there was an interval of thirty days between the onset of the paralysis and the

operation. A contractural muscle state developed in 2 of these patients. One of these had refused surgery. In the other the contracture developed where the mastoidectomy was performed. Two patients with severe facial pain subsequently died of an infection of the petrous tip.

In 39 patients the paralysis was observed after the operation. In 30 patients the palsy was noted within the first twenty-four hours. The time of onset of the paralysis in relation to the operation was as follows:

Number of Cases	Time of Onset of Paralysis (In Relation to Operation)
7	Immediately
15	12 hours after
8	24 hours after
1	2 days after
3	3 days after
1	4 days after
1	5 days after
2	7 days after
1	3 days after

Six patients in whom there occurred a post-operative facial paralysis observed within the first twelve hours, later developed a contractural state. The 16 patients in whom the paralysis definitely occurred before the operation or after an observed period of delayed onset following the operation, recovered completely. The factor causing the palsy was definitely not related to the surgeon's chisel or rongeur.

**Trauma**—There were 26 cases of palsy of the facial nerve as the result of trauma through accident—as follows: 6 from falls (one fell as a baby, 2 fell down subway stairs), 6 from automobile accidents, one from riding a sled which hit a tree, 4 from head injury (precise cause not determined), 2 from forceps injury, one from a tear from an elephant's tusk, 2 from bullet wounds, 2 from cuts by glass, one from getting

TABLE 7.—TABULATION OF CASES PREVIOUSLY REPORTED

Case	Sex	Age	Side	Blood Pressure		Remarks
1	F	73	Right	150	120	.....
2	F	52	Right	203	130	Headache; vertigo
3	F	42	Left	235	140	Right side of face felt numb
4	F	51	Right	210	.....	Very sudden attack
5	F	60	Left	220	.....	.....
6	M	57	Right	200	.....	.....
7	F	57	Left	190/120	.....	Previous right hemiplegia
8	F	48	Right	200	120	Recovered from right hemiplegia
9	M	59	Left	208/240	105/138	Hypertensive heart disease
10	M	54	Left	208	100	Sudden tinnitus
11	M	49	Left	270	150	Known hypertension
12	M	64	Left	180	100	Previous right contracture
13	F	50	Left	238	134	Felt drowsy. Slept several hours on receiving complete facial
14	F	54	Right	248	120	.....
15	F	10	Right	268	140	.....
16	F	65	...	210	108	Diabetes. Known hypertension

his head caught in a vise; one from having a nerve torn by a spike.

Injury to the facial nerve acquired as the result of a basal skull fracture is usually accompanied by bleeding from the homolateral ear. Usually this type of paralysis is the result of a head injury of a severe degree and is associated with periods of unconsciousness of varying duration. Of the 17 patients so injured the paralysis cleared up except in 4, who developed a contractural state.

In 4 other cases there was a definite delay in the onset of the paralysis following severe injury to the base of the skull. Two developed it three days after the accident, one four days later, and in a fourth it was not observed until ten days after the accident.

The mechanism of slow onset is obscure. It may possibly be (1) compression from hemorrhage or (2) injury to the blood supply to the nerve itself. There was no positive evidence of the development of a mastoiditis in these cases.

Damage to the nerve through faulty application of the forceps is rather unusual, but 2 cases having been noted, both of which recovered. Its infrequency is testimony to the modern training of the obstetrician.

One striking complete peripheral nerve laceration occurred in a man aged 71, who while trying to repair his barn was impaled by a large spike which had been driven through 2-by-4-inch scantling. The spike penetrated the right cheek, cutting the right facial nerve just prior to its entrance into the parotid gland.

Of interest both in "mastoid" and trauma are the cases that developed later, after the original ictus, there being 9 following mastoidectomy and 4 following trauma. Because of the nature of the associated trauma, operative in one and accidental in another, the correct evaluation of pain, taste disturbances, and hyperacusis could not be determined. In both cases the paralysis seemed to be the logical result of a disturbance

within the fallopian canal, possibly hemorrhage or edema, although consideration must be given to an independent neuritic factor, particularly in the cases of belated postoperative onset.

*Hypertension.*—There were 28 cases of facial paralysis in which vascular hypertension was found, 18 of which were believed to be the result of hemorrhage into the facial aqueduct. Sixteen were previously reported (see Table 7).

The 2 additional cases developed as follows:

M. C., a woman aged 51, a known hypertensive noticed while sitting in a church pew a sudden quivering of the entire right side of the face and immediate inability to move the muscles of her face. Sixteen years previously she had had an attack of Bell's palsy which affected the opposite side of her face; hence she was familiar with the symptoms. When she was examined two days after the onset there was a complete right peripheral facial palsy. The blood pressure was 210 over 120 mm. Hg. Pain was absent. There was no disturbance of taste.

C. Z. (Case 18), a man aged 50, developed an attack of dizziness of sudden onset and marked degree, with buzzing and impairment of hearing of the middle-ear type in the left ear, associated with an immediate facial paralysis. He had been treated for hypertensive vascular disease and had been suffering from attacks of headache and vertigo. The blood pressure was 220 over 110 mm. Hg. There was no local pain.

It is the opinion of the writer that the cause of sudden facial paralysis from hypertensive vascular disease is bleeding from the petrosal artery which enters the upper limits of the facial canal at its constricted portion. Interruption of the blood supply would disrupt the circulation to the facial nerve trunk supplied by vasa nervorum arising from the petrosal artery. This theory is supported by the location of hemorrhage in cases reported by Moxon, and that of Monia-Vinard and Pueil.

See Table 8.

TABLE 8.—CONTRASTING FEATURES

	Bell's Palsy	Hypertension
Age, percentage	Young adults, 68% before 40	Higher decades (after 40)
Perversion of taste	Present in 110 of 304 cases	Absent
Pain	Present in 123 of 304 cases. Retro-aural common antedating paralysis	Absent
Onset	Frequently gradual	Always precipitate
Recurrence	23 of 304 cases	No recurrence
Associated physical signs	None	Vascular hypertension, arteriosclerosis
Significant history	Absent	Previous headache, vertigo, known high blood pressure, or bleeding elsewhere, brain retinal

## Herpes

*Case 1.*—A 43-year-old woman with herpes of the ear developed left-sided facial paralysis in June, 1933; the patient recovered.

*Case 2.*—A 9-year-old girl developed right-sided facial paralysis with severe pain in February, 1928. She was suffering from herpes of the external auditory meatus. Later facial nerve anastomosis was performed.

*Case 3.*—In May, 1938, a 56-year-old woman with herpes of the ear and left side of the face with impaired sensation in the left fifth cranial nerve developed left-sided facial paralysis with severe pain. The patient recovered; she died of cancer years later.

*Case 4.*—A 49-year-old woman developed complete left-sided facial paralysis in June, 1928. She had herpes of the aural canal with pain in the ear. She later recovered.

*Case 5.*—A 52-year-old woman with herpes of the left ear and aural canal and concomitant involvement of the left fifth facial nerve developed left-sided facial paralysis, from which she recovered.

*Case 6.*—A 56-year-old man with facial herpes developed right-sided facial paralysis and vertigo.

## Contractural Facial Paralysis

Fifty-seven instances of contractural facial paralysis were observed, of which 40 were of the acute inflammatory type. The remaining 17 resulted from the following causes: mastoid disease, 8; trauma, 3; meningitis, 1; syphilis, 1; congenital, 1; unknown, 3.

Of the 40 cases of acute Bell's palsy, 30 presented themselves for the initial examination with a facial palsy in varying degrees of a contractural state. Ten patients first examined during the acute phase when examined after periods of months to three years were found to possess a contractural facial paralysis.

## Myoclonic Facial Paralysis

In many respects myoclonic facial paralysis

TABLE 9.—MYOCLONIC FACIAL PARALYSIS

Case	Sex	Age	Side	Remarks
1	M	40	Right	..
2	M	42	Left	..
3	F	63	Left	Patient was a nurse
4	M	18	Left	..
5	F	46	Left	..
6	F	37	Right	..
7	F	62	Right	Trauma
8	F	65	Left	Arteriosclerotic
9	F	59	Left	Patient was a school teacher. Left eye was affected
10	F	68	Left	Onset 23 years before
11	M	43	Left	Duration of attacks first—several weeks, last—3 months
12	M	75	Left	Onset 3 years—twitching about left eye
13	F	70	Right	Onset 2 1/2 years before. Lasted about a month. Recurred. Lasted 2 years
14	F	40	Left	..
15	F	40	Right	..
16	M	48	Left	..
17	M	23	Right	Patient also had otitic hydrocephalus
18	M	44	Right	Patient was colored. Brief periods of freedom. Lasted 5 years. Eye affected first.
19	M	42	Left	..

is a mystery more disturbing than a contracted facial paralysis because of the coarse irritative muscular movements, the spasmodic twitchings being mainly centered about the eyes and mouth.

A point of interest observed in 2 cases, and described in a third, is the tendency to spontaneous remission.

Although this is not strictly a facial palsy, in long-continued cases there is a moderate paresis of the facial musculature. On casual inspection the badly contracted facial paralysis, with the diffuse fibrillary movement, and the myoclonic facial spasm with its muscular fascicular twitchings, bear a close resemblance. In the contracted facial palsy there are no periods of relaxation such as are characteristic of facial myoclonic spasm.

See Table 9.

## Bilateral Facial Paralysis

Most commonly, both halves of the face are implicated as a local manifestation of a generalized neuritic involvement. There were 8 patients with both halves of the face involved at the same time. However, 3 of these cases were of the Bell's variety, with all the characteristic symptoms.

Another developed a polyneuritis with bi-facial implication, two years following recovery from an attack of rheumatic facial paralysis. In still another the facial involvement was the sole manifestation of an inflammatory process involving the central nervous system, the cerebrospinal fluid showing a pleocytosis.

## Summary

1. Statistical analysis of 500 personally studied cases is the purpose of this paper.
2. Three hundred and four cases belonged to the group of acute "rheumatic type," or Bell's palsy.
3. In addition to the acute type, trauma (23 cases) and mastoid disease (53) constitute the major causes.
4. Of the symptoms associated with Bell's palsy, pain occurred in 122 cases, or 40 per cent,

and taste disturbance was noted in 144 cases, or 45.5 per cent.

5. Refrigeration, or exposure to cold, as a cause of the acute type occurred but thirteen times in 304 cases. There were 21 patients whose paralysis was associated with pregnancy, usually near term.

6. Hypertensive arteriosclerotic vascular disease was a causative factor in 18 cases.

7. The facial nerve has a tendency to spontaneous recovery, best noted in patients with a pure motor paralysis.

## JOURNAL OF NEUROSURGERY

The publishing of a new journal devoted to neurosurgery adds to the firm foundation of this branch of medicine. Neurologic surgery developed largely in this country as the result of the stimulus given to it by Harvey Cushing, who began publishing papers on the subject as early as 1900 and continued up to the time of his death in 1939. A society of neurosurgeons named in his honor has now established a journal with an editorial and advisory board that reflects the widespread interest in this subject. The chairman of the board is Dr. Gilbert Horrax, of Boston, long associated with Dr. Cushing at the Peter Bent Brigham Hospital. Other members are from Chile, Canada, England, and Sweden. It is presumed that after the war representation from other parts of the world in which neurosurgery flourishes will appear on the editorial committees. The managing editor, Dr. Louise Eisenhardt, of New Haven, Connecticut, was also closely associated with Dr. Cushing for many years, and she collaborated with him in his final great volume reporting his surgical experience with meningiomas. Dr. Eisenhardt is head of the Brain Tumor Registry at

the New Haven Hospital, an undertaking begun by Dr. Cushing, where many specimens from other clinics are examined yearly and compared with those already on file.

In the first number of the *Journal of Neurosurgery*, Dr. Horrax describes some of Harvey Cushing's contributions to the subject, reviewing the development of the technic of surgical exploration of the cranial contents by this master. Another paper deals with fibrin foams as hemostatic agents and with fibrin films in the repair of dural defects and in the prevention of meningocerebral adhesions; the authors are Dr. Franc D. Ingraham and Dr. Orville T. Bailey, of the Harvard Medical School and the Children's Hospital. These and other contributions make the first number of this journal an important addition to medical literature. The illustrations are excellent, many of them being in color. This journal, therefore, is indeed a welcome addition to medical literature, and with the fine standards set up by the initial number the editor and her editorial advisers are open to sincere congratulations.—*New England J. M., May 4, 1944*

## TOOTHsome GUAVA HELPS TO KEEP UNITED STATES FIGHTING MEN FIT

The common or garden guava, a perennial favorite among dessert-loving Latin Americans, is now playing an important part in helping to keep United States servicemen fit and happy. Because guava has a Vitamin C content from ten to twenty times that of other fruits used in making jams and jellies, the War Department is adding it to apples, oranges, apricots, peaches, grapes, and other fruits used in making spreads.

Ten per cent of guava added to other fruits in the preparation of jams and jellies more than doubles the Vitamin C content of the mixture. In other words, one pound of guava contains as much of the scurvy-preventing vitamin as nine pounds of the other fruits named.

As the Vitamin C content of guava varies widely in accordance with the variety of the fruit and its ripeness, scientific cultivation might produce high-yielding strains with an even higher vitamin content than the wild fruit which is now largely used in Latin American countries.

Guavas, sometimes known as guayaba, flourish throughout tropical America and have been introduced successfully in India and South Africa. A factory was recently built in South Africa to dehydrate the fruit and convert it into a powder used in supplementing the diet of British soldiers.

On this continent, the fruit has been a favorite for centuries with the natives of other American republics. Spread on bread or crackers, or served as a dessert with cheese, it is an inevitable part of a well-planned meal anywhere in Spanish America.

The manufacture of guava jellies and jams is an important industry in Cuba, Puerto Rico, Brazil, and other American countries. Brazil alone has more than four hundred small factories producing guava jellies for the domestic market, and a United States company has established a plant in Mexico to quick-freeze guava pulp for use in the United States in the manufacture of ice cream and ices.—*Release from the Office of the Coordinator of Inter-American Affairs*



# STABILITY OF THE FASTING BLOOD SUGAR IN DIABETES MELLITUS

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**A** DETERMINATION of the blood sugar in the fasting state is insisted on by most laboratories, hospitals, and physicians for the management of diabetes mellitus. The reason for this is twofold: first, that the blood sugar level at the time of food abstinence represents the true degree of control of the carbohydrate metabolism that has been accomplished by diet, or by diet and insulin; and, second, that in the fasting state the blood sugar is as immutably fixed as a lighthouse. Most internists feel secure in the effectiveness of the prescribed therapy when the fasting blood sugar is normal, and most surgeons are willing to operate under those circumstances.

A series of hourly determinations of fasting blood sugars was made on 70 diabetics over a period of three hours, with the idea of testing out

fasting blood sugar in the course of three hours might drop or rise considerably or remain fixed.

The possibility that protamine insulin acts for more than twenty-four hours and might depress the fasting blood sugar has to be considered.

However, there were a considerable number of patients receiving protamine insulin whose blood sugar did not fall but rose, and there were also many instances in cases under treatment with globin or regular insulin (the effect of which is not supposed to last for more than twenty-four hours) of a rise in blood sugar. This verifies the conclusion made some time ago that in all diabetes the protamine insulin does not act for as long as twenty-four hours. It is evident that either an increase or a diminution in the fasting blood sugar may occur in the course

TABLE 1—SPONTANEOUS CHANGES IN BLOOD SUGAR WITHIN THREE HOURS IN RESTING FASTING DIABETICS WITHOUT INSULIN ON THE MORNING OF OBSERVATION\*

Age	Insulin Type—Units	0	Fasting Blood Sugar 1 Hour	Mg./100 Cc 2 Hours	3 Hours	Fluctuations in Blood Sugar (in 3 Hours)	Mg./100 Cc Maximal
12	R 30	302	340	246	173	-127	165
14	G 40	381	330	341	331	-50	50
14	P 40 R 10	125	116	99	76	-49	49
13	R 30	330	344	337	283	-47	61
13	P 5 R 10	187	161	161	145	-42	42
13	P 22 R 12	237	190	195	195	-42	47
17	P 0 R 45	195	179	174	153	-42	42
12	R 30	275	348	364	330	+115	115
43	P 30 R 25	153	181	118	224	+71	71
19	R 72	125	132	189	185	+60	64
33	R 24	301	313	330	352	+51	51
13	R 40	419	485	460	462	+43	75
11	R 60	375	391	383	415	+40	40
13	P 40 R 13	136	145	151	176	+40	40
15	P 50 R 16	93	115	108	92	-1	23
62	None	191	195	192	190	-1	2
12	P 40	131	131	129	124	-2	2
58	P 10	88	82	87	86	-2	6
49	I 10	103	109	98	111	+2	13
42	None	228	230	237	230	+2	9
45	P 25	208	240	220	210	+2	32

\* Seventy cases studied, ages 10 to 65. Only 21 cases are classified "with the maximal drop 7 with the maximal rise and 7 with a minimal change. The utility of regarding the fasting blood sugar as a fixed value is evident.

† Globin insulin (with 210) is designated as G, and protamine zinc insulin as P. Since by many observers, including ourselves, crystalline and unmodified (regular) insulins are believed to have an almost identical effect upon the blood sugar, these two forms of insulin are allied to by one letter—R.

the validity of the current conceptions in regard to fasting blood sugars. Capillary blood sugars were determined according to the micro method of Lauber and Mattice.<sup>1</sup> Table 1 shows that the

of three hours regardless of the type of insulin used.

The number of cases showing an insignificant change in the blood sugar—that is, less than 11 mg. per 100 cc—was 25, or 36 per cent, of the total number (Table 2). A slight drop—that is, 11 to 20 mg. per 100 cc—in the blood sugar was noted in 12, or 17 per cent of the cases, and a moderate drop, 21 to 40 mg. per 100 cc, was

From the Research Division of the New York Diabetes Association Inc.

Contributions by Mr. Felix Morgenstern to the Research Division of the New York Diabetes Association Inc. supported this project.

TABLE 2—SUMMARY OF THREE-HOUR CHANGES IN THE FASTING BLOOD SUGAR OF 70 PATIENTS WITH DIABETES MELLITUS

Variations in Blood Sugar Mg. per 100 Cc.	Total Number	Number of Cases Drop in Blood Sugar	Rise in Blood Sugar
0 to 10 (insignificant)	25 (36%)	12 (17%)	1 (1%)
11 to 20 (slight)	13 (18%)	15 (21%)	5 (7%)
21 to 40 (moderate)	20 (29%)	7 (10%)	5 (7%)
41+ (marked)	12 (17%)	—	—
Total	70 (100%)	34 (48%)	11 (15%)

noted in 15, or 21 per cent, of the cases, and a marked drop—that is, more than 40 mg. per 100 cc.—existed in 17 cases, or 10 per cent of the total number. A slight rise in blood sugar (less than 11 mg. per 100 cc.) occurred within the three-hour fasting period in one case, and a moderate increase (21 to 40 mg. per 100 cc.) in 5, or 7 per cent, and the same numbers showed a marked elevation (41 mg. per 100 cc., or more).

Those showing a drop in blood sugar exceeded the number of cases exhibiting a rise, there being 34 patients, or 48 per cent, whose blood sugar became lower during the fasting period, while 11, or 15 per cent, showed a rise. It may be

concluded that in about two-thirds of diabetics there is a significant change in the blood sugar during a three-hour fasting period, a rise being about three times as frequent as a drop in the blood sugar.

### Conclusion

The fasting blood sugar over a period of three hours in 70 fasting diabetics showed a significant change in the blood sugar values in 63 per cent of the cases. In 48 per cent there was a drop in the blood sugar, and in 15 per cent a rise. Consequently, the interpretation of the fasting blood sugar as a fixed quantity and an absolute guide to the status of the diabetes is not valid. Since the determination of fasting blood sugars often disrupts the day's routine as far as the administration of insulin and the time of breakfast are concerned, and may entail a good deal of nervous strain for the patient, it would seem preferable, at least in those diabetics who are not confined to a hospital, to obtain the blood some time after breakfast and make the proper allowances in evaluating the blood sugar.

### Reference

1. Lauber, Frances U., and Mattice, Marjorie R.: *J. Lab. & Clin. Med.* 29: 113-116 (January) 1944.

## BOARD OF OBSTETRICS AND GYNECOLOGY MEETS IN PITTSBURGH

The annual meeting of the American Board of Obstetrics and Gynecology was held in Pittsburgh, Pennsylvania, from June 7 to June 13, 1944, at which time ninety-three candidates were certified.

A number of changes in Board regulations and requirements were put into effect which were designed to aid civilian candidates as well as those in the service. Among these is the waiver, temporarily, of our A.M.A. requirement for men in the Army or Navy, especially for those who proceeded directly, or almost so, from hospital services into Army or Navy service, upon a statement of intention to join promptly upon return to civilian practice. At this meeting the Board also accepted a period of nine months as an academic year in satisfying our requirement for certain years of training.

This is only for the duration, and even men who are not eligible for military service but who are nevertheless in hospitals where the accelerated program is in effect have been allowed to submit to us this short-time period of training in lieu of our previous requirements.

Beginning with the next written examination, which is scheduled to be held the first Saturday afternoon in February, 1945, this Board will limit the written examination to a maximum period of three hours, and in submitting case records at this time, all candidates' case abstracts whose ob-

stetric reports do not include measurements either by calipers or, as indicated, by acceptable x-ray pelvimetry, will be considered incomplete.

Prospective applicants or candidates in military service are urged to obtain from the Office of the Secretary a copy of the *Record of Professional Assignments for Prospective Applicants for Certification by Specialty Boards*, which will be supplied upon request. This record was compiled by the Advisory Board for Medical Specialties and is approved by the Offices of the Surgeons General, having been recommended to the Services in a circular letter, No. 76, from the War Department Army Service Forces, and referred to as the *Medical Officer's Service Record*. These will enable prospective applicants and candidates to keep an accurate record of work done while in military service and should be submitted with the candidate's application, so that the Credentials Committee may have this information available in reviewing the application.

Applications and *Bulletins* of detailed information regarding the Board requirements will be sent upon request to the Secretary's Office, 1015 Highland Building, Pittsburgh 6, Pennsylvania. Applications must be in the Office of the Secretary by November 15, 1944, ninety days in advance of the examination date. The time and place of the Spring, 1945 (Part II), examination will be announced later.

# CUTANEOUS MANIFESTATIONS OF TUBERCULOSIS

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THE manifestations of cutaneous tuberculosis vary widely. The clinical varieties are many, and their classifications are unsatisfactory. There are three general groupings: (1) according to histologic changes, (2) according to immunologic reactions, and (3) according to clinical types. The most widely accepted classification is that of Gans,<sup>1</sup> who divides tuberculodermis into two large groups. In one group are forms of cutaneous tuberculosis which are localized and spread from an initial infected spot, and in the other are those which are widespread and are disseminated by hematogenous routes.

## A Localized tuberculosis

- 1 Primary tuberculous complex
- 2 Tuberculosis verrucosa cutis
- 3 Tuberculosis cutis orificialis
- 4 Scrofuloderma
- 5 Lupus vulgaris

## B Hematogenous types

- 1 Acute milium tuberculosis
- 2 Papulonecrotic tuberculid
- 3 Lupus miliaris disseminatus faciei
- 4 Rosacea-like tuberculid of Lewandowsky
- 5 Lichen scrofulosus
- 6 Erythema induratum of Bazin
- 7 Sarcoid of Boeck
- 8 Sarcoid of Darier-Roussy
- 9 Lupus pernio

All the varieties of tuberculodermas are caused by the tubercle bacillus. The differences in clinical and histologic characteristics can be accounted for by the differences in immunologic reactions, attenuation of organisms, environmental factors, and the like. The bacillus of Koch is frequently found in lesions of acute milium tuberculosis and less frequently in lupus vulgaris, tuberculosis cutis orificialis, tuberculosis verrucosa cutis, and rarely is found in papulonecrotic tuberculid, rosacea-like tuberculid of Lewandowsky, lichen scrofulosus, erythema induratum, and hardly ever in the sarcoids. In some the histology is frankly tuberculous, and in others it suggests tuberculous reactions or is tuberculoid. The tuberculin reactions vary all the way from strongly positive to negative. In fact, in the sarcoid group the tuberculin reactions are less sensitive than in a normal group.

Cutaneous tuberculosis is not rare, but it is unusual in the United States. It is much more common in Europe. Cases observed in the United States are usually in the foreign-born or immediate descendants of immigrants. Tuberculodermas occur more frequently in children and young adults than in older individuals. However, because of the slow progress of the disease, the destructive types, such as lupus vulgaris and ulcers, are seen in older individuals. In some instances the progress is arrested as a result of the development of natural immunity. Tuberculosis of the skin is rarely seen in sanatoriums for tuberculosis.

Formerly many conditions were considered to belong to the group of tuberculodermas. In a few instances the causative organism of these conditions is the tubercle bacillus, but in most cases it is something else. The diseases which were formerly considered to be caused by the bacillus of Koch are lupus erythematosus, granuloma annulare, erythema nodosum, lichen nitidus, and acne cachecticorum. The literature is extremely confusing when it comes to terminology. Many different names have been used to describe the same disease. As, for example, papulonecrotic tuberculid would be called folliculitis, acnitis, hidradenitis destruens suppurativa (Politzer), and many others.<sup>2</sup> These descriptive terms have made it very difficult to satisfactorily classify all forms of cutaneous tuberculosis. More recently Jadassohn has suggested the use of the term "tuberculosis" to be followed by a qualitative adjective for designating the various forms of cutaneous tuberculosis. This has added to the confusion which already exists.

## Localized Tuberculodermas

**Primary Tuberculous Complex**—The primary complex of tuberculosis is a rare form of cutaneous tuberculosis.<sup>3</sup> It is seen in children, and several instances of this condition have been reported in adults who never before were infected by the bacillus of Koch, either in the skin or in any other organ. Tubercle bacilli invade the host from some exogenous source. At the site of inoculation an ulcer (tuberculous chancre) appears. There is lymphangitis and lymphadenitis as well as some elevation in temperature. Tuberculin reaction following inoculation is positive, whereas prior to inoculation it was negative.

Most of the earlier cases were encountered after ritual circumcision of infants, where the officiat-

the Medical Society of the  
New York May 5 1943  
New York Post-Graduate  
Columbia University Dr

Medical School and Hospital  
George M. MacKee, Director

ing rabbi, who harbored tubercle bacilli, sucked the wound after cutting the prepuce.

The primary complex of tuberculosis of the skin is equivalent to that of the Ghon tubercle in the lungs and other internal organs. This disease may occur on any part of the body. The lesion heals within several months, leaving a scar at the affected site.

Treatment with x-rays may speed involution of such lesions. Localized and generalized ultraviolet irradiation is beneficial. Surgical excision and tuberculin therapy may be used in selected cases.

*Tuberculosis Verrucosa Cutis.*—This disease occurs both in those who have active tuberculosis and in those who have been exposed to tuberculosis but are without any clinical evidence of the disease. There are three main sources of contamination:

1. From tuberculous cadavers—pathologists, anatomists, and medical students fall victim to this source of contamination.
2. From infected animals—butchers, veterinarians, and meat inspectors fall victim to this source of contamination.
3. From tuberculous sputum—patients with active pulmonary tuberculosis fall victim to this source of contamination.

The usual site of infection is the dorsum of the hands and fingers. The lesions begin as small wart-like papules. They increase in number and coalesce to form plaques. They may be round or oval, and are dark red or purplish in color. There may be some exudation and crusting. Lesions may be single or multiple and occasionally are frambesiform and vegetative. The lesions spread by peripheral extension and sometimes undergo spontaneous healing. At the periphery of the lesion is an area of infiltration which serves to differentiate a tuberculous wart from a common wart. Following inoculation, especially in a healed tuberculous subject, there may be lymphangitis, lymphadenitis, and slight elevation of temperature.

*Verruca necrogenica*, described by Laennec, is a variant of tuberculosis verrucosa cutis.

Conservative treatment is indicated for these lesions. Treatment with x-ray yields excellent results. Ultraviolet irradiation may be used. In uncomplicated cases the lesions may be excised, either by scalpel or by electrosurgical current. Bed rest is indicated in the presence of constitutional symptoms.

*Tuberculosis Cutis Orificialis.*—This variety of cutaneous tuberculosis represents a direct extension and is secondary to active tuberculosis of the internal organs. For example, orificial lesions of the penis are probably secondary to tubercu-

losis of the kidney. Lesions about the nose, mouth, and tongue are probably secondary to tuberculosis of the lungs. When lesions of tuberculosis cutis orificialis occur it generally denotes a terminal stage of visceral tuberculosis. It indicates a complete breaking down of resistance to the tubercle bacillus. The patients are always in poor general health, and the earliest lesion is a yellowish miliary tubercle or nodule which soon coalesces with other nodules and quickly breaks down, forming round or oval sluggish and granulating ulcers. The lesions are very superficial and soft. The edges are irregular and the floor is uneven. When ulcers occur on the tongue they are usually longitudinal and they are accompanied by pain. The tuberculin reaction is usually negative.

Lesions of tuberculosis cutis orificialis respond extremely well to x-rays. Thus some temporary comfort to the patient ensues, but the final outcome of the disease is unaffected. Methods of treatment which add to the discomfort of the patient should not be instituted.

*Scrofuloderma.*—This term is restricted to those cases in which the skin is involved secondarily by direct extension from tuberculous nodules, lymph glands, or bones. The cervical lymph nodes in children are most commonly affected.<sup>3</sup> The disease usually begins as subcutaneous nodules which become progressively larger. They are painless and the overlying skin is bluish-red in color. Gradually the skin becomes thin, atrophic, and, as a result of liquefaction necrosis, ulceration occurs at one or more points. The ulcerated lesions are round or oval and really represent the mouths of sinuses which extend deep into the lymph glands. There is a constant discharge of seropurulent-like material. The lesions heal very slowly, with scar formations which are often contracted and disfiguring.

The treatment of choice for many varieties of scrofuloderma is roentgen therapy. Total excision of the infected nodes is preferable to incising and draining a fluctuant node. Ultraviolet radiation is beneficial, especially for the large ulcerative lesions. As in all forms of cutaneous tuberculosis, particular attention should be paid to general hygienic and systemic measures, which should include a high vitamin and salt-poor diet.

*Lupus Vulgaris.*—Lupus vulgaris is an ulcerative, gnawing, and devouring disease which starts early in life. The untreated cases become progressively worse. The face and upper extremities are affected in approximately 85 per cent of the cases. Lesions may appear, however, on any part of the body. The very first lesion of lupus vulgaris is a small subcutaneous nodule which on diascopic pressure presents the golden-brown color resembling apple jelly. The term

"apple-jelly nodule" is commonly used to designate this change. As the disease progresses new nodules develop and arrange themselves in plaque formation. Ulceration ensues and finally scars form. There is peripheral extension and central healing in well-marked longstanding cases. The contraction of the scars leads to deformities. The lesions are usually sharply demarcated and the color is dark red or purplish. There are no subjective symptoms. Lupus vulgaris may assume extremely varied appearances. Many different adjectives have been used to describe these various forms. The three most common types encountered are lupus planus, lupus tumidus, and lupus hypertrophicus. The many other adjectives used to describe the different varieties of lupus vulgaris will not be given, as they only serve to confuse the picture.

There is no specific remedy for the treatment of lupus vulgaris. Systemic treatment and hygienic measures such as are used in treating pulmonary tuberculosis are most essential. Some state that good results have been obtained with a diet high in vitamin content and low in sodium chloride. Tuberculin therapy has also been found to be valuable. Generalized and localized ultraviolet irradiation, particularly with the Finsen light, over a prolonged period of time, has been helpful in some cases. Very early, small, new lesions are probably best treated by excision or by electro-surgical destruction. X-rays and radium are of value in selected localized cases. Injections with gold sodium thiosulphate have been found to be of little or no value in the treatment of lupus vulgaris.

### Hematogenous Types of Cutaneous Tuberculosis

The forms of tuberculodermas belonging to this group have an extensive and symmetric distribution, and spread by way of the hematogenous route. The method of spread really represents a tuberculous septicaemia. However, all of the entities, with the exception of acute miliary tuberculosis, are not serious from the standpoint of danger to life. All forms of hematogenous tuberculodermas are caused by the tubercle bacillus, and the only justification for their being grouped under this heading is because of the method by which the disease extends.

*Acute Miliary Tuberculosis.*—This disease is rare and occurs for the most part in children. It is a cutaneous manifestation of generalized visceral tuberculosis which occurs in those with pulmonary tuberculosis and little or no immunity to the bacillus of Koch. The disease is fatal and death is most often due to tuberculous meningitis. The lesions are generalized and may be either purpuric papules, vesicles, or pustules. Even

small ulcers covered with crusts sometimes form.

When systemic tuberculosis becomes so extensive as to produce lesions on the skin and in the meninges, no method of treatment is effectual.

*Papulonecrotic Tuberculid.*—This disease is uncommon and occurs in young adults. The upper and lower extremities and the face are the usual sites of involvement. The trunk may also be affected. The lesions are probably produced by hematogenous showers of attenuated tubercle bacilli. They begin as tiny dull-red elevations which are sharply circumscribed, isolated, firm, and painless. They are symmetrically distributed. Soon after the appearance of the papules central necrosis takes place. Ulcerations form which heal within a few weeks, leaving atrophic scars with hyperpigmented borders. As a rule lesions in different stages of involution and evolution are seen at the affected sites. Occasionally they occur concomitantly with erythema induratum of Bazin.

In treating this condition it is important to pay particular attention to general hygiene and to nutrition. Generalized and localized heliotherapy is of value, and treatment with antiseptic topical remedies may hasten involution.

*Lupus Miliaris Disseminatus Faciei.*—This variety of hematogenous tuberculoderma occurs most commonly on the face of adults, especially in young Negroes.<sup>6</sup> The lesions consist of small papules which do not ulcerate and which on diascopic pressure show typical apple-jelly nodules. They are situated along the edges of the eyelids, the mucocutaneous junction of the lips, and about the nares. They occur in crops and persist for months or years. When they undergo spontaneous involution they leave scars which are barely perceptible. The histology so closely resembles lupus vulgaris that the opinion has been expressed that these lesions may represent an unusual form of lupus vulgaris.

In treating lupus miliaris disseminatus faciei one should be guided by the same principles as those utilized in the treatment of lupus vulgaris. Those destructive methods which leave scars should not be utilized, since most cases heal spontaneously. Treatment with tuberculin and ultraviolet radiation are efficacious.

*Rosacea-Like Tuberculid of Lewandowsky.*—This condition is so named because of its marked resemblance to ordinary rosacea.<sup>7</sup> It occurs usually in adults. The lesions consist of discrete or conglomerated papules which are slightly elevated and whose color varies from bright red to brownish red. They are situated on the forehead, cheeks, and chin. The nose and the glabella are generally free of lesions. On diascopic pressure the characteristic apple jelly nodule is elicited.

TABLE 1.—LOCALIZED TUBERCULOSIS

Name of Disease	Clinical Signs	Histologic Characteristics	Tuberculin Reaction
Lupus vulgaris	Apple-jelly nodules. Dark red coalescing nodules forming plaques on face, nose, ears, etc.	Tubercles only in the subcutis at times. Tubercles plus inflammatory reaction in any part of the cutis, more specifically in the subcutis.	Hypersensitive
Tuberculosis verrucosa cutis	Solitary verrucous patches on dorsum of hands occurring in tuberculous subjects, prosectors, etc.	Tubercles with inflammatory process and granulation tissue with marked epithelial changes.	Hypersensitive
Tuberculosis cutis orificialis	Ulcerations of mucous membranes or skin of orifices	Tubercles with inflammatory process and granulation tissue with marked epithelial changes	Anergic
Scrofuloderma	Ulcerations of the skin overlying lymph nodes	Tubercles with inflammatory process and granulation tissue in the subcutis with ulceration and sinus formation.	Hypersensitive
Primary tuberculous complex	Ulceration at site of inoculation, with lymphangitis and lymphadenitis and fever	Characteristic tuberculous histology with finding of tubercle bacilli.	Hypersensitive

Occasionally both rosacea and rosacea-like tuberculid of Lewandowsky occur in the same individual. Subjective symptoms are absent and usually there is no evidence of visceral tuberculosis. The histologic picture is that of tuberculosis, and the tuberculin reaction is usually positive.<sup>8</sup>

These lesions respond to a variety of measures. Intravenous or intramuscular injections of gold salts and tuberculin therapy are perhaps the two best methods of treatment. Some cases do very well with exfoliating topical remedies combined with moderate doses of ultraviolet radiation. This condition is particularly resistant to roentgen therapy.

*Lichen Scrofulosus*.—Lesions of this disease occur on the trunk and less frequently on the extremities. They consist of small, pinhead-size, flattened papules which are slightly elevated. The color varies from dusky red to that of normal skin. The papules are so small that they often escape detection. Occasionally there is a tiny scale over the papules. The lesions are usually located about the hair follicles. The condition may appear suddenly and may persist for many months. When the lesions disappear no scars remain. Tuberculous children and young adults are most frequently affected. The tuberculin reaction is positive and the histologic picture is that of true tuberculosis.

In the absence of active visceral tuberculosis, treatment with ultraviolet rays and tuberculin injections is satisfactory.

*Erythema Induratum of Bazin*.—This disease is chronic and tends to recur. It occurs as a rule on the backs of legs of girls and young women whose occupation requires them to stand for long periods of time and whose personal or family history may yield evidences of tuberculosis. Tender nodules develop in the deeper lay-

ers of the skin and in subcutaneous tissues. They are round or oval and are generally the size of a pea or larger. The color of the skin overlying the nodules varies from bright red to a purplish hue. In the course of several weeks the lesions become doughy and finally necrosis takes place, ending in ulcer formation. They heal very slowly, leaving permanent scars and pigmentation. The histologic picture shows tubercle formation with an inflammatory reaction and necrosis.<sup>9, 10</sup> The tuberculin reaction is negative in the majority of patients.

Treatment consists of rest in bed, elevation of the affected extremities, high vitamin and salt-poor diet, injections of tuberculin, and generalized as well as localized ultraviolet ray therapy. Roentgen therapy, especially of early lesions, is beneficial.

*Sarcoid of Boeck*.—The lesions of sarcoid of Boeck<sup>11</sup> may appear on the face, back, shoulders, or extremities. They vary in size from that of a pinhead to a dime. They may be single or multiple and are brownish red to purple in color. Slight elevation and smooth surface are constant findings. When the lesions disappear slight atrophic scarring might result.

*Sarcoid of Darier-Roussy*.—These lesions occur less frequently than the sarcoid of Boeck. They originate in the subcutaneous tissues.<sup>12</sup> The skin overlying the nodules may be normal or purplish. After several weeks or months they may break down, leaving ulcerated areas. They occur on any part of the body. Evidences of sarcoid appear in the lungs, long bones, and the lymph nodes. In fact, sarcoidosis may affect the viscera without cutaneous manifestations. The condition is seen in both tuberculous and nontuberculous subjects. The disease tends to heal spontaneously.

The systemic disease, sarcoidosis, is attracting

TABLE 2 —HEMATOGENOUS TYPES OF CUTANEOUS TUBERCULOSIS

Name of Disease	Clinical Signs	Histological Characteristics	Tuberculin Reaction
Acute miliary tuberculosis	Widespread purpuric or papular eruption occurring in terminal stage of general visceral tuberculosis	Tubercle formation and demonstration of tubercle bacilli in lesions	Negative
Lichen scrofulosus	Small pinhead-sized papular eruption appearing mainly on the trunk in children	Tubercle plus inflammatory process without necrosis occurring in the papillary zone. Process is superficial	Hypersensitive
Rosacea-like tuberculid of Lewandowsky	" " " "	Tubercles with inflammatory process	Hypersensitive
Papulonecrotic tuberculid	" " " "	Inflammatory process with necrosis without suggestion of	Hypersensitive
Erythema induratum of Bazin	Deep nodules and some ulcers occurring on dorsal aspects of lower extremities in young women. Lesions in different stages of evolution and involution	" " " "	Hypersensitive
Lupus miliaris disseminatus faciei	" " " "	Tubercles and inflammatory process simulating lupus vulgaris	Hypersensitive
Sarcoid of Boeck	" " " "	Tubercle formation primary in the cutis without any other pathologic process	Hypersensitive (positive reaction)
Sarcoid of Darier Roussey	Subcutaneous small nut-sized nodules. Sometimes they ulcerate. Usually found on extremities	Tubercle formation primary in the subcutis without any other pathologic process as in lupus pernio	Hypersensitive
Lupus pernio	Symmetric purplish lesions of face, nose, ears, toes, and fingers simulating frostbite. Sometimes ulcerations often associated with lupus vulgaris	" " " "	Hypersensitive

much attention. This condition has been repeatedly discussed in current articles. The subject is too complex for review in this brief communication. The reader, however, is advised to read the article on this subject written by Longcope.<sup>13</sup>

The histologic picture is the same in both the superficial and deep type of sarcoidosis. There is definite tubercle formation either in the cutis or in the subcutis. The tuberculin reaction is negative. As a rule, patients with sarcoid can tolerate stronger tuberculin dilutions than normal individuals.

The best results in the treatment of the Boeck and Darier-Roussey types of sarcoid are obtained with roentgen therapy. Arsenotherapy is also beneficial. In extensive and generalized cases the treatment for systemic tuberculosis should be instituted.

**Lupus Pernio**—The early lesions of lupus pernio are small nodules which appear where the circulation is terminal, namely, the tip of the nose, the pinnae of the ears, fingers, and toes. The lesions have a purplish color and many telangiectases are seen on the surface. Ulceration takes place early in the course of the disease. After healing scars result. This rare condition is aggravated by cold. It is sometimes found associated with lupus vulgaris, lupus erythemato-

sus, and scleroderma. Some even consider this to be a variant of Raynaud's disease.

The treatment consists in preventing infection of the ulcerated areas and in improving capillary circulation either by local means or by the use of vasodilators.

The purpose of this paper has been to review the various manifestations of cutaneous tuberculosis, their association with visceral tuberculosis, and the general therapeutic management of each variety.

To clarify some of the confusion that exists even among dermatologists in regard to the various tuberculodermas, it may be advisable to summarize this subject in tabular form (see Tables 1 and 2).

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## AN EXPERIMENT IN READING MEDICAL LITERATURE

Some of the faculty members in the Medical School [Medical College of Virginia] have been interested in studying reading abilities of medical students. During the accelerated war program, speed of reading has become, more than ever, a problem. How fast do medical students read? Can they be made to read more rapidly? Do they really know how to read? These, and similar questions, were in the minds of these faculty members.

Last fall we constructed a test which we called "Exercises in Reading Medical Literature" and gave it to seventy-one freshmen. The first exercise was scored on the basis of the number of seconds it took to read it. Scores ranged from 40 to 140 seconds. The second exercise was scored on the basis of the number of words read in 40 seconds. The score range was from 70 to 303 words. For the 71 students the correlation between the two methods of measuring speed was  $0.86 \pm 0.02$  (Pearson Product-Moment Method). This indicates that either method of measuring speed is worth while.

Exercises III to VIII were more definitely concerned with comprehension of the content read, tested by multiple-choice and true-false items covering the content. While there were time limits, they were not unduly restrictive—i.e., each student had some opportunity to read at his own speed. Comprehension, therefore, was emphasized more than speed, whereas in Exercises I and II there was no measure of comprehension obtained. Correlations between Exercises I and II, and Exercises III to VIII combined, were, respectively,  $0.23 \pm 0.07$  and  $0.26 \pm 0.07$ . These low correlations, substantiating one another, supply definite evidence that speed and comprehension in reading medical literature are not closely related. The medical student who reads fastest is not necessarily the one who reads with comprehension. There are evidently other factors which operate in comprehension than speed alone. Neither can one say that the slowest reader comprehends better, for the correlations were positive—not negative.

A further suggested experiment is one where there are no rigid time limits on the reading—where the test is a power test of comprehension alone. Any reluctance to experiment in reading medical literature may be relieved if the instructional values of such exercises are considered.

The lecture method has become probably too much of a fixture in medical education—in all higher education, for that matter. It undoubtedly has its value, but its exclusive use is not justified by any objective measurements of its values. The writer

has often given expression to the thought that the lecturer is the one who probably gets most of the benefits from his lectures. While people generally seem to enjoy some lectures, there has never been enough measurement of the outcomes of lectures in medical schools, for example, to draw any valid conclusions concerning their effects. The writer would guess, from many years of contemplation and reflection, that often the outcomes from many lectures by professors to students are meager from the students' point of view. At least it is "up to the professors" to furnish valid and reliable measurements to prove the contrary. The reading-exercise method, with valuable reading material selected, supplies an alternative to the lecture method which may be tried on occasion anyway. It may prove to be an excellent method of instruction and has advantages of furnishing numerical data on student understanding and mental achievement as well. Why not give it a trial? It might prove itself so worth while that it would receive increasing emphasis in instruction.

Teaching by and through testing is a method which probably has not been stressed sufficiently. The measuring value of testing has been too exclusively emphasized. Certainly, there is inherent in the testing process a student motivation not always found in other methods of instruction.

While the lecture method—especially the lecture demonstration—is indispensable under certain circumstances, and especially in stimulating emotional attitudes, there are other methods which should be given experimental opportunity to prove themselves. The reading exercise is one. It might not even be necessary to have tests mimeographed.

Textbook materials might be utilized for the purpose. Preparing tests, mimeographing, and scoring are three objections to this method of instruction. The use of the regular text; a simple method of supplying queries—even the oral method might be utilized; and a quick and easy method of scoring the queries; these might overcome the objections usually raised against too much testing with the complaints arising in preparing, mimeographing, and boring time spent in scoring.

Is it not true that an instructor's function is partly one of instructing students how they may best get desired information from the printed materials available for his courses? The reading-exercise method is recommended for this purpose.—Arthur Willis Hurd, in *Journal of the Association of American Medical Colleges*, May, 1944

## SOCIAL HYGIENE ASSOCIATION SEEKS MEMBERS

Wanted in 1944: Ten thousand more corresponding and collaborating members of the American Social Hygiene Association, participating actively in

this work in the cities, counties, and states of the nation. Write for information.—*Social Hygiene News*



# TISSUE DOSE ESTIMATION IN COMBINED ROENTGEN AND RADIUM THERAPY FOR CARCINOMA OF THE UTERINE CERVIX

WILLIAM E. HOWES, M.D., Brooklyn

THE custom of stating radium dosage in milligram hours only is almost universal in gynecologic applications. Such terminology is, of course, inadequate to indicate the radiation energy delivered to any part of the pelvis. If all the factors are included in the designation, such as the location and size of the radium sources, the filtration, and radium content, then the dosage can be calculated to any location within its practical sphere of influence. This is best computed in gamma r. To properly evaluate dosage it is necessary to measure the amount of radiation delivered to the tumor and to the surrounding normal structures, so that adequate amounts be delivered to the tumor and careful determination made as to the radiation received by surrounding organs.

Carcinoma of the cervix is an epithelial new growth whose curability by radiation can be considered no greater or less than that of other epithelial tumors. To sterilize this lesion radiologically, the equivalent of eight to twelve erythemas must be delivered to all parts of the growth within three months. The spread of the neoplasm is by direct extension centrifugally, the earliest spread being usually in the parametric structures in the region of the paracervical triangle. In a high percentage of the cases there is a coincident spread to the surrounding lymph nodes, among which is included the obturator node, which is located within 1 cm. of the lateral pelvic wall on a level with the cervix. The combined x-ray and radium therapy must therefore be directed not only to destroy carcinoma in the cervix but to a large circumferential zone which for the purposes of this paper may be considered as a spheroid 10 cm. in its horizontal diameter and 5 cm. in its vertical diameter. To evaluate the results of therapy it is therefore obligatory to calculate radiation energies not only to the center but also to the periphery of this vulnerable zone. Normal structures in the pelvis must also be guarded from over-irradiation.

At the Brooklyn Cancer Institute radium dosage is calculated in gamma r. This is computed for all surface, interstitial, and most intraluminal applications in accordance with dosage tables as published by Paterson and Parker,<sup>1</sup> Quimby,<sup>2</sup> Laurence,<sup>3</sup> and Wolf.<sup>4</sup> However, the anatomy of the vagina and the cervical and uterine canals does not lend itself to any

such configuration of the radium sources that such tables can be used as a basis of calculation.

Arneson<sup>5</sup> and Nolan<sup>6</sup> have presented a computation of distribution of radium dosage measured in erythemas for various radium arrangements within the uterus and vagina. Sandler<sup>7,8</sup> and Tod<sup>9,10</sup> have attacked the problem differently and have made definite measurements in gamma r as delivered to certain fixed points. This same method has been followed by Tenahan,<sup>11</sup> using interstitial radium needles. To meet this problem at the Brooklyn Cancer Institute it was decided to measure the gamma r delivered to the cervix and to certain theoretic fixed points in the pelvis for two specific geometric configurations of the radium sources such as the tubes might be arranged in suitable cases (Figs. 1 and 2).

A diagram of the radium tubes so located was drawn up (Figs. 1 and 2) and the following points chosen for measurement:

A—a point 2 cm. lateral to the center of the lower radium tube in the cervical canal. This is calculated as just lateral to the cervix at the base of the broad ligament and marks the nearest point of the crossing of the uterine artery and the ureter. This is designated as the paracervical triangle and represents the most sensitive location in the pelvis as to limitation of tolerance of normal structures to radiation (Tod<sup>9</sup>).

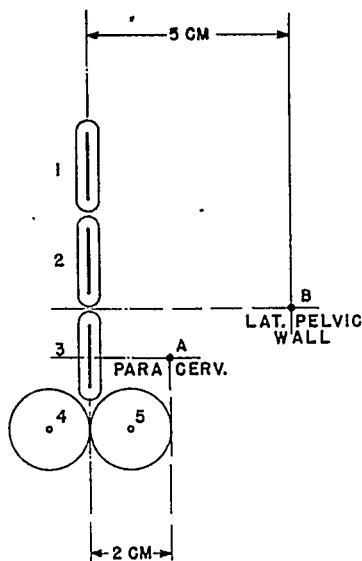
B—a point 5 cm. lateral to the interspace between the lower two tubes in the cervical and uterine canal and represents the position of the obturator node located within a centimeter of the lateral pelvic wall. Point B may also be thought of as a focal point within the lateral extension of the broad ligament. This is called the lateral pelvic wall.

C—a point  $1\frac{1}{2}$  cm. below the tip of the lower tube in the cervical canal and at the apex of the circumference of the central cork within the vagina. This represents the external os and is called the cervix.

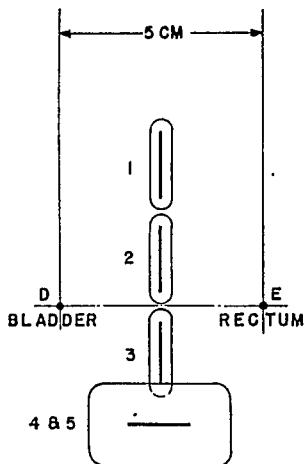
D and E—points  $2\frac{1}{2}$  cm. anterior and posterior to the junction between the lower tubes in the uterine canal, designated as bladder, D, and rectum, E. The bladder and rectum are, of course, large mobile organs. D and E were computed as theoretically representing some near point in their wall and the dosage computed should therefore be con-

Read at the Annual Meeting of the Medical Society of the State of New York, Buffalo, May 6, 1943.





ANTERO-POSTERIOR VIEW



LATERAL VIEW

## RADIUM DOSAGE DISTRIBUTION

FIG. 2

lateral vaginal walls, gradually spreads during the period of application, as shown in Fig. 2.

Such a stereotyped setup as a basis for computation of gamma  $r$  is therefore fraught with many inaccuracies. Such a plan does, however, represent a workable method of computation of gamma  $r$  which is being carried out in clinical practice at the Brooklyn Cancer Institute. It is understood that the gamma  $r$  so estimated represent a relative indication of dosage delivered and can in no way be considered as an absolute measurement. Every effort is being made to increase the accuracy of these measurements.

### X-Ray

A depth dose graph is drawn up from actual

measurements of each patient treated in the x-ray department. All roentgen dosage at the skin is planned secondary to determination of a specific tumor dose (Camiel<sup>12</sup> and Howes<sup>13</sup>). With this graph and the radium chart as described, it is possible to compute the  $r$  delivered to specific points within the pelvis as delivered by roentgen and gamma rays. This paper is presented to illustrate such a method of computation as carried out at the Brooklyn Cancer Institute.

*Technic of Usual X-Ray Therapy.*—Most pelves are divided into six ports, three anterior and three posterior. Each field extends from the crest of the ilium to the pubis and is of sufficient width to include most of the anterior and posterior circumference of the pelvis without

TABLE 1.—ROENTGENS PER MILLIGRAM HOUR  
(0.5 Mm. Pt Filtration—See Fig. 1)

Tube No.	A Para-cervical Triangle	B Lateral Pelvic Wall	C Cervix	D Rectum or Bladder
1	0.27	0.23	(0.20)*	0.46
2	0.90	0.31	(0.49)	1.07
3	1.92	0.31	(3.42)	1.07
4	0.42	0.14	1.59	0.53
5	0.67	0.19	7.10	0.36
6	2.23	0.46	1.59	0.53
Total	6.41	1.64	(14.39)	4.02
Average	1.07	0.27	(2.39)	0.67

\* Figures in parentheses are approximate.

TABLE 2.—ROENTGENS PER MILLIGRAM HOUR  
(0.5 Mm. Pt Filtration—See Fig. 2)

Tube No.	A Para-cervical Triangle	B Lateral Pelvic Wall	C Cervix	D Rectum or Bladder
1	0.27	0.23	(0.20)	0.46
2	0.90	0.31	(0.49)	1.07
3	1.92	0.31	(3.42)	1.07
4	0.74	0.18	3.75	0.55
5	1.92	0.32	3.75	0.55
Total	5.75	1.35	(11.61)	3.70
Average	1.15	0.27	(2.34)	0.72

Correction factor for 1.0 mm. Pt = 0.90.

Correction factor for 1.5 mm. Pt = 0.80.

The above radium dosage distribution calculation was made by C. B. Braestrup, using the dosage tables computed by Bernard S. Wolf, M.D.<sup>4</sup> (Radium Dosage Tables).

overlap, usually 10 by 15 cm. The target skin distance is constant at 50 cm. A ray quality whose half value layer is 1.8 mm. Cu is used. The radiation equivalent of 200 r as measured in air is delivered to each of two ports daily. The areas are so rotated that three treatments are required to completely circle the pelvis. The hips are raised higher than the shoulders, so that some of the pelvic loops of the ileum may gravitate above the fields of radiation. The roentgen cycle is usually divided into two parts, as when sufficient x-ray therapy has been completed to deliver 4,500 r to the parametria, contracture of the vaginal vault and cervical canal results. This may force modification of the originally planned radium setup.

### The Technic of the Radium Insertion

Three radium tubes are tied in chain formation within a thin-walled rubber sac. These are inserted the length of the uterine and cervical canal, the lowest tube being located just above the ex-

ternal os. An arm of the colpostat is then pressed into each lateral vaginal fornix. Whenever possible a cork is placed between, up against the vaginal surface of the cervix. The rectum and bladder are packed away with plain gauze. When six 10 mg. tubes are used they may be left *in situ* for one hundred hours. This gives a total of 6,000 milligram hours, or if 15 mg. tubes are used the time interval is generally reduced to approximately sixty-seven hours.

### Computation of Gamma r

The gamma r delivered to the five predetermined points are computed from Table 1. Thus with six tubes of 10 mg., located as drawn in Fig. 1, the following computation is made: The total for each column is multiplied by 10, as each tube contains 10 mg., and this by 100, as

TABLE 4.—COMPUTATION OF X-RAY DOSAGE  
Large Pelvis—Diameter = 23 Cm. (Moderate Compression)

TABLE 3.—COMPUTATION OF X-RAY DOSAGE				
Small Pelvis—Anterior-Posterior Diameter = 16 cm.				
To be delivered to parametria, 4,500 r—fields 10 × 15 cm.				
	Depth, Cm.	Tumor Dose, r per 100 r in Air	r in Air	Back Scatter
Skin				
Port I	8	67.7	1,800	2,846
Port II	8.5	63.4	1,800	2,466
Port III	8.5	63.4	1,800	2,846
Port IV	9	59.2	1,800	2,466
		253.7 r per 100 r in air to each of four ports		
		253.7 × 18 = 4,566.6 r to para- metria		
Bladder				
Port I	2.0	127.3		
Port III	10.5	46.6		
		173.9 × 18 = 3,130 r		
Rectum				
Port I	10.0	50.8		
Port III	1.5	134.5		
		185.3 × 18 = 3,335 r		
Cervix				
Port I	7.5	71.8		
Port II	8.0	67.7		
		139.5 × 18 = 2,511 r		

To be delivered to parametria, 4,500 r—fields 10 × 15 cm.				
	Depth, Cm.	Tumor Dose r per 100 r in Air	r in Air	Back Scatter
Skin				
Port I	11	43.4	3,000	4,110
Port II	11.5	39.7	3,000	4,110
Port III	11.5	39.7	3,000	4,110
Port IV	13.0	31.0	3,000	4,110
		153.8 r per 100 r in air to each of four ports		
		153.8 × 30 = 4,614 r to para- metria		
Bladder				
Port I	5.0	94.0		
Port III	13.5	28.6		
		122.6 × 30 = 3,678 r		
Rectum				
Port I	13	31.0		
Port II	3.5	110.0		
		141.0 × 30 = 4,230 r		
Cervix				
Port I	10.5	46.6		
Port II	11.0	43.4		
		90.0 × 30 = 2,700 r		



FIG 3A Roentgenograph of location of radium sources in the uterus and vagina. Immediately after application



FIG 3B Ninety-six hours later. Note the spreading of the arms of the colpostat

each tube is left *in situ* one hundred hours, this result must be multiplied by the correction factor, representing the filtration, which is, in this instance 1 mm P+. Thus the gamma r delivered are shown in the following graph

(Dose in milligram hours = 6 000)

A	B	C	D and E
Paracervical	Lateral Pelvic Wall	Cervix	Bladder and Rectum
6 410	1 640	14 340	4 020
$\times 0.9$	$\times 0.9$	$\times 0.9$	$\times 0.9$
5 769	1 476	12 901	3 618

If tubes of 15 mg. each had been used and the time reduced to sixty-seven hours the milligram hours would be the same, but these 15 mg. tubes have an increased filtration—namely, 1.5 mm platinum—and therefore the correction factor will be 0.8 and the computation will be as follows

(Dose in milligram hours = 6 000)

A	B	C	D and E
Paracervical	Lateral Pelvic Wall	Cervix	Bladder and Rectum
6 410	1 640	14 340	4 020
$\times 0.8$	$\times 0.8$	$\times 0.8$	$\times 0.8$
5 128	1 312	11 512	3 216

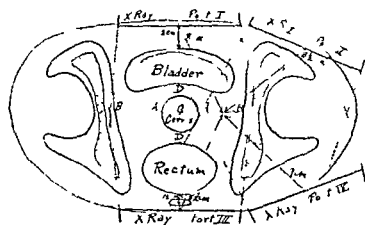


FIG 4 Schematic cross section of pelvis 16 cm in diameter

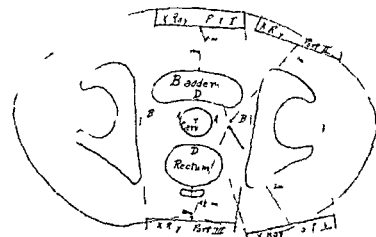


FIG 5 Schematic cross section of pelvis 23 cm antero-posterior diameter (with compression)

This illustrates the reduced dosage delivered when increased filtration is not compensated for by increase in radium content or time

The error, of course, is much larger in computing gamma r with different radium setups

For instance, if the uterine canal is short and will accommodate but two radium tubes and the vaginal vault is so small that only two arms of the colpostat can be inserted, the following method of computation is used

The total gamma r delivered by these four tubes can be estimated by eliminating Tube 1 from Table 2 and multiplying the totals for each anatomic location by the number of hours of application—i.e., 100, and by the strength of each tube—i.e., 15 mg

(Dose in milligram hours = 6 000)

A	B	C	D and E
Paracervical	Lateral Pelvic Wall	Cervix	Bladder and Rectum
8 220	1 680	17 115	4 860
$\times 0.8$	$\times 0.8$	$\times 0.8$	$\times 0.8$
6 576	1 344	13 692	3 888

TABLE 5.—COMBINED X-RAY AND RADIUM DEPTH DOSE

Small Pelvis—Anterior-Posterior Diameter = 16 Cm. Estimated Total			
	X-Ray	Radium*	Erythemas
A Paracervical triangle (parametria)	4,500 r	5,800 gamma r	13
B Lateral pelvic wall (parametria)	4,500 r	1,500 gamma r	8½
C Cervix	2,500 r	13,000 gamma r	17
D Bladder	3,100 r	3,600 gamma r	8½
D <sup>1</sup> Rectum	3,300 r	3,600 gamma r	9

Estimated to nearest 100 r.

X-ray—quality HVL 1.8 mm. Cu., 600 r per erythema.

Radium—1,000 gamma r per erythema.

\* Six 10 mg. tubes 1 mm. Pt, 100 hours.

From this computation it appears that for a given total dose two radium sources in the uterus plus two sources in the vagina will deliver a greater total dose to the cervix and paracervical triangle with an equal gamma r equivalent to the lateral pelvic wall as compared with the three sources in the uterus and in the vagina.

The time table, which is of course significant in determining the abilities of the surrounding structures to withstand a large dose of radiation, would then be as follows: The first half of the x-ray cycle is delivered within three weeks; the radium is then placed *in situ* for from three to four days; this is followed by a one month's interval to permit the intensity of the radium reaction to subside before the final course of x-ray therapy is added. Such an outlined course of therapy will consume from three to four months.

To further illustrate this method of depth dose computation, two pelves have been sketched: one relatively small pelvis measuring 16 cm. (Fig. 3) in its anterior-posterior diameter and one larger pelvis measuring 23 cm. after moderate compression (Fig. 4). The tissue doses delivered to the cervix, bladder, and rectum are computed when 4,500 r have been delivered to the parametria. This takes for granted that the parametria on each side have been crossfired by four ports, and the cervix, bladder, and rectum, being in the midabdomen, by two ports only (Tables 3 and 4).

To this has been added the radium dosage as computed in gamma r to these same structures.

TABLE 6.—COMBINED X-RAY AND RADIUM DEPTH DOSE

Large Pelvis—Anterior-Posterior Diameter = 23 Cm. Estimated Total			
	X-Ray	Radium*	Erythemas
A Paracervical triangle (parametria)	4,600 r	5,100 gamma r	13
B Lateral pelvic wall (parametria)	4,600 r	1,300 gamma r	9
C Cervix	2,700 r	11,500 gamma r	16
D Bladder	3,700 r	3,200 gamma r	9
D <sup>1</sup> Rectum	4,200 r	3,200 gamma r	10

Estimated to nearest 100 r.

X-ray—quality HVL 1.8 mm. Cu., 600 r per erythema.

Radium—1,000 gamma r per erythema.

\* Six 15 mg. tubes, 1½ mm. Pt, 67 hours.

The gamma r to the paracervical triangle, bladder, and rectum are so calculated as to represent the largest amount these structures would receive by measuring to their nearest point. For final analysis these doses are transposed into erythema equivalents. The erythema for the roentgen ray is taken as 600 r and for the gamma ray 1,000 r. The erythema equivalent for both radiant sources has then been calculated for these two pelves (Tables 5 and 6).

### Summary

Tissue dosage estimation in combined roentgen and radium therapy for carcinoma of the uterine cervix as carried out at the Brooklyn Cancer Institute is described.

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### POSTWAR BREAKDOWNS

The greatest number of breakdowns will be observed among the men who come back after the war is over. One should imagine that heroes on land, on the sea, and in the air, who have gone through all the horrors of modern warfare, should be able to

play with the demands of a peaceful life as easily as a Chinese juggler with his sticks. 1918 proved without doubt that it is easier to be heroic than to be courageous.—L. Sicher, M.D., in *Med. Woman's J., Mar., 1944*

# THE ROLE OF MOTIVATION IN PSYCHOTHERAPY\*

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SOONER or later during psychotherapy the physician is confronted with the motives underlying the patient's desire for treatment. These motives are vastly more important in emotional illness than in physical disease, for they have a determining effect on the duration of therapy as well as on the possibilities of cure.

There are many reasons why a person with an emotional problem seeks psychotherapy. By far the most common reason is to alleviate the suffering associated with his illness. Usually he has already run the gamut of sedatives, tonics, endocrines, and placebos in a desperate search for relief. In psychotherapy he believes he has come to the end of his rope, and while he ardently wishes to liberate himself from his suffering, an attitude of hopelessness may permeate his outlook. Nor can he be entirely blamed for his skepticism. Psychotherapy to him is a nebulous phenomenon that defies his sense of logic. How talking with the physician can possibly have an ameliorative influence on his stomach complaint, fatigue, phobias, and other symptoms is beyond his comprehension. He may even regard the physician's failure to prescribe medications as a sign that his complaints are considered imaginary. Consequently, at the earliest possible time, it is urgent for the physician to show him that his suffering, though significant, is merely the currency with which he pays for his neurosis, and that more basic issues are involved, such as his relationships with people and faulty attitudes toward life.

We may take as an example the phenomenon of tension, which is one of the most universal symptoms in neurosis. Tension is a manifestation of disturbed homeostasis and is associated with powerful excitations which reach the nervous system at various levels of integration—visceral, somatic, and psychic. The excitations serve a biologic function, mobilizing the physical and psychologic resources of the individual to restore homeostasis. In normal persons tension stimulates behavior patterns of an adaptive nature directed toward the gratification of unfulfilled vital needs. In neurotic persons, on the other hand, techniques of adaptation are so inadequate that they are unable to gratify biologic and social needs, and the individual is as a result diverted from goals consistent with his best interests. Furthermore, the neurotic substitutes for normal

goals compulsive drives for power, perfectionism, dependency, detachment, or masochistic surrender, which make inordinate demands on himself and on others and eventually alienate him from the world. His drives serve a spurious safety function and failure to satisfy them will contribute vastly to his state of tension.

The visceral manifestations of tension result from massive stimulation of the autonomic nervous system by way of the hypothalamus. Changes are wrought throughout the smooth musculature and internal organs of the body. Among the more common symptoms are esophageal, diaphragmatic, and gastrointestinal spasms, hyperchlorhydria, altered tonus of vessels with changes in the blood distribution throughout the body, abnormal stimulation of the heart, bladder, and genitalia, and a lowered threshold to sensory stimuli resulting in paresthesias, hyperesthesias, and functional disturbances of the higher sensory organs. In certain predisposed individuals visceral changes of an irreversible nature may occur in the form of psychosomatic illness. The effect of tension on somatic centers produces an increased tonus of the striated musculature with "neuromuscular hypertension," spasms, and ties. Excitations of tension stimulate the psychic apparatus, probably by way of the corticohypothalamic pathways, producing subjective feelings of inner distress and a symbolic representation of tension in the form of obsessive, phobic, and hypochondriacal thoughts.

Tension states are so bound up with the general adjustments of the individual to life that mere treatment of the physical manifestations of tension can have but a palliative effect. Eventually, through psychotherapy, the patient realizes this and is brought to the understanding that his original motive for treatment, namely, the alleviation of his distress, must be replaced by the motive of understanding the causes of his suffering. He may, for example, become increasingly aware of how he makes unreasonable demands of people in authority, clinging to them in a dependency relationship, subjecting himself to self-abasement and submission to insure his being protected and loved. He may discover that he harbors bloated ambitions to a point where even normal accomplishments are signs of mediocrity and failure. Or he may gain insight into how in a close interpersonal relationship he feels threatened and strives to remove himself from people by steering a course of com-

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\*A second paper by Dr. Wolberg, "Goals and Objectives of Psychotherapy," will appear in a later issue.

pulsive independency, isolation, and detachment. In short, he may discover that because of inimical experiences in his early life he has developed trends oriented around desires for power, dependency, isolation, prestige, superiority, perfectionism, unobtrusiveness, or self-devaluation—trends which inevitably bring him into conflict with the world and with other individuals. He may see how his disorganized relationship with the world which initially fostered the development of neurotic trends is reinforced by the very pursuit of his trends. He may even come to an understanding of how his trends inevitably lead to feelings of helplessness by undermining his self-esteem and to the generation of tension by vitiating his basic needs.

Yet the realization that suffering results from an exploitation of his neurotic trends is not in itself a sufficient incentive to motivate the patient to abandon them. Usually he will cling to his drives in spite of his suffering and with full insight of what he is doing to himself. Indeed, it becomes increasingly clear that the fulfillment of his trends, destructive as they are, is the moving principle of his life. An untrained observer may consider his aims useless or foolish or inconsequential, but if one analyzes the deep meaning of neurotic drives one can discern in them a vicarious means to security, affection, and self-respect. The neurotic person seeks from life things that every human being wants and needs, such as companionship, love, assertiveness, and creative self-fulfillment, but unlike the normal person he feels so vulnerable within himself that he can attain these goals only if he renders himself so powerful or so dominant or so compliant or so good that he cannot be injured in his relationships with others. The particular drives that he pursues protect him from hurt and render it possible to gain at least part of the gratifications essential to living. To remove these is a dual threat, for he feels he will be exposed to injury and will lose the only technic he knows to secure for himself essential wants. Eventually, of course, his drives interfere with his relationships with people and maneuver him into a position where he feels humiliated, exploited, and in jeopardy of being hurt. They even isolate him from his own biologic impulses. Nevertheless, they wield an unreasonable influence over him and the patient cannot be expected to part with them until he has learned new ways of adjustment.

As a matter of fact, when he first becomes aware of how suffering is an inevitable consequence of his neurotic goals, he will seek from the physician a formula whereby he can indulge his drives without paying the penalty of suffering. He will somehow imagine that his failure

to utilize his neurosis successfully is due to an error in himself and he will want the physician to correct this error, believing that when this is accomplished he will soar upward, performing in ways not merely godlike, but even better than God. His chief motivation then is not to abandon his neurosis but to find out better ways to make it work.

It may be many months before the patient is fully cognizant of how enmeshed he is in the contradictory tangles of his trends. Considerable work may have to be done before he can recognize within himself normal biologic and social promptings which he has repressed because he has associated them with fantastic fears of injury or danger. Even more work will be needed before he acknowledges that a gratification of these promptings is within his reach without first having to employ ingratiating, self-punitive, withdrawing, or domineering tactics as embraced in his compulsive drives.

Before this can be accomplished, however, it is essential to effect a transition in his motivations from the mere alleviation of suffering or the bolstering of neurotic defenses to the ability to enter into cooperative relationships in which he feels neither threatened, unloved, open to criticism, challenged, or driven to domineer or intimidate. Three aspects are involved in this reintegration of motives, and these include his attitudes toward people in general, toward authority, and toward himself.

The neurotic individual's attitudes toward the world and toward people are poisoned by destructive experiences in his past. He may have been disappointed in his strivings for love and security. He may have been crushed in the development of assertiveness or in his evolution as an independent being. As a result, he is at the mercy of catastrophic feelings of helplessness, unworthiness, vulnerability, and lowered self-respect. To overcome these feelings he has found it essential to develop subterfuges to defend himself against a potentially hostile and menacing world. His relationships with people involve a conviction that he will be hurt or humiliated or disappointed, and he employs many defenses to protect himself from harm. In his relationship with the physician he is bound to develop the same type of attitudes and defenses, but as he discovers through interpretation the meaning of his defenses he may eventually see that while at one time they served a protective function, they no longer serve a purpose in his present relationships.

The second essential motivation is associated with a wholesome attitude toward authority. Every person possesses within his conscience a compulsive set of attitudes patterned after the



prohibitions and injunctions of his parents. The conscience of the neurotic person is usually hypertrophied and tyrannical and punishes him for impulses and strivings of a relatively normal nature. It is almost as if there resides within himself a parental representative who threatens him with the loss of love or with physical injury for the slightest transgression. To avert fancied hurt he may subject himself to inordinate disciplines and he may feel obligated to repress basic needs and impulses. He will transfer these attitudes to all symbols of authority toward whom he may act in an ingratiating, submissive compliant manner, burning inwardly with resentment which he dares not express because of fear of counteraggression. On occasion he may turn his hostility on himself and succumb to depressive or psychosomatic symptoms, or when his hostility becomes overwhelming, or when he momentarily dissolves his conscience in drink, he may explode in acts of destruction or violence with aftermaths of guilt and self-recriminations. Mental health is associated with a reorientation in his attitudes toward authority to a point where he no longer considers himself at the mercy of a menacing overlord who can manipulate or murder him. In addition he must liberate himself from the tyranny of his conscience, which has hitherto put an embargo on the most reasonable needs and demands.

The third essential motivation is the ability to be expressive and self-assertive. Involved are tolerant attitudes toward one's impulses and desires. An undermined self-esteem is one of the most basic constellations found in the neurotic individual and expresses itself in feelings of inadequacy and worthlessness toward oneself, one's capacities and functions. Often self-contempt is so deep and unconscious and its avowal so disastrous to the integrity of the individual that it is disguised by strivings for self-admiration or perfectionism or by arrogant notions of one's capacities and significance. Lowered self-esteem is important as a source of tremendous tension, since a healthy regard of the self is essential to the security feelings of the individual. A devaluated self-regard renders the person sensitive to the slightest frustration, because every rebuff or obstacle is interpreted by him as evidence that he is helpless and contemptible. Furthermore, the undermined person is tremendously vulnerable and constantly obsessed with the feeling that he cannot be loved for himself, but rather will be loved in proportion to how well he performs or obeys or distinguishes himself.

Before mental health can be assured it is necessary that the person be motivated toward a healthy estimate of himself as an individual with a right

to express his basic wishes and urges without fear of disastrous consequences.

Development to a state where the patient has a spontaneous wish for better relationships with people, with the world, and with himself is a mark of tremendous progress in personality growth. In itself it is an index of the abandonment of neurotic goals. It usually comes about only after much treatment. It is necessary to regard with great caution any premature declaration on the part of the patient that he seeks to throw aside all his compulsive trends, for this may be nothing more than an appeal for approval and an attempt to distract the physician from probing into more neurotic motivations. The real test lies not in vociferous utterances, hopes, and promises, but in the carrying out of his new motivations in behavior and in the expression of his needs and impulses in action.

### Summary

The motives that determine the patient's desire for psychotherapy are tremendously important, for so long as he clings to inadequate or neurotic motivations little progress in treatment can be expected. In most cases the chief motivation is to escape suffering and to eliminate symptoms that the patient senses are destructive to himself and others. Suffering is at first considered an isolated experience and is rarely related to existing neurotic character trends. After a period of treatment the individual becomes conscious of the fact that his symptoms are consequences of his particular attitudes toward life. He may become aware of the fact that his neurotic drives oppose basic biologic needs, that they involve contradictory and conflictual strivings, or that they are insatiable and make unfair demands on himself and others. Gradually he may see that suffering is inescapable so long as he pursues his trends. This insight in itself is not sufficient to create change, but it may provide the incentive to investigate the nature and consequences of his trends.

At the same time that the patient desires change he will resist it vigorously because his defenses are as essential to him as life itself. As psychotherapy proceeds he gradually will become conscious of the fact that there are other motivations in life perhaps more gratifying than those which are embraced by his neurotic trends. He may, for example, become cognizant of the fact that there are other techniques than those he knows for the attainment of essential needs which do not involve internal contradictions and do not terminate inevitably in suffering. As his values reorient themselves his motivations will change toward strivings consonant with mental health. These involve the ability to relate himself co-

operatively with people and include the re-establishment of harmonious attitudes toward authority and toward himself. The dynamic effect of a change in motivations is to release the individual from the tyranny of his conscience, permitting him to express his basic biologic and social goals without fear of injury or the loss of love, enabling him to be self-assertive and creative in keeping with his abilities and aptitudes.

Words themselves will not bring the patient around to an abandonment of neurotic motivations and to an acceptance of those essential to mental health.

It is by experiencing a new attitude toward people in the interpersonal relationship with the physician that the patient will realize that it is not necessary to exploit his neurosis to get that which he wants from life.

## REVISION OF NATIONAL FORMULARY PLANNED

Deletion of nearly a third of the drugs in the *National Formulary* and acceptance of about 115 new monographs were among the extensive changes approved by the Committee on National Formulary at its three-day session held recently at the American Institute of Pharmacy, Washington, D.C. Developmental work on *N. F. VIII* is now under way, and the new edition is expected to be on the pharmacist's reference shelf by the end of 1945.

The use of English instead of Latin for primary drug titles was one of the basic changes of policy authorized. This action, which overthrows a long-standing tradition in pharmaceutical compendia, was taken as a step toward greater rationality in drug nomenclature and, in the opinion of the Committee, is in conformity with the trend of modern medical science and prescribing. Latin will be retained as the secondary title, appearing in smaller type and occupying the place of present English titles.

The composition and nature of *N. F.* drugs will be indicated in the titles to the greatest extent possible. Drugs dispensed under *N. F.* synonyms must also meet the official standards.

Metric doses will be given greater emphasis in the new edition. Consideration was given to a proposal to drop apothecaries' doses completely, but the Committee felt that the steady trend toward the use of the metric system had not yet reached the

point where apothecaries' doses could be safely omitted from the monographs.

Discussion later centered on enteric-coated medications, since some of those now being dispensed do not dissolve in the intestinal tract. Apparently standards will not be developed in time to include enteric coatings in the forthcoming revision but the Subcommittee on Solid Preparations for Internal Use is at work on the project.

Extension of another basic policy of the Committee will make *N. F. VIII* more self-contained, thus obviating the necessity of looking up information in the *Pharmacopoeia* in connection with *N. F.* procedures.

Changes in formulas brought about by the exigencies of war will not be included in the regular revision. Instead they will be maintained on a temporary basis in a special supplement to be issued concurrently with *N. F. VIII*.

Recognizing the value of official standards to the practicing pharmacist as a means of providing dependable drugs and useful dispensing information, the Committee on National Formulary, composed of representatives of the nation's pharmacists, is inviting each state pharmaceutical association and individual pharmacists to participate in the revision work in an advisory capacity. Comments concerning the list of deletions and admissions tentatively planned are invited.

## BIOLOGICAL PHOTOGRAPHIC ASSOCIATION WILL MEET IN BINGHAMTON

The Biological Photographic Association will hold its fourteenth annual meeting on September 7, 8, and 9 in Binghamton, New York. Papers will be presented by experts in the fields of still and motion picture photography, photomicrography, etc. Round-table discussions will be scheduled for the exchange of ideas and methods. A salon of pictures made by leading biologic photographers from all over the country will be an important feature of the meeting, and representatives from firms specializing in precision equipment will demonstrate their products.

The Binghamton meeting will offer members and their guests an opportunity to visit Ansco, manufacturer of photographic materials. The Ansco color process will be demonstrated, and a new color printing method will be described which permits the making of color prints directly from color transparencies in one exposure step. A paper will be

given by Dr. Bruce Buckler, Director of Visual Education of International Business Machines Corp., concerning modern technic in the preparation of visual aids.

The Biological Photographic Association is a non-profit organization for the study of photography as applied to medicine, dentistry, and the biologic and natural sciences. Its members are scientific photographers, scientists who use photography in their work, and amateurs with a deep interest in biologic and medical photography. The *B. P. A. Journal* is published quarterly, constituting a volume of about 250 pages, which is furnished free to members.

Further information about the Association and the Convention program may be obtained by writing to the Secretary of the Biological Photographic Association, University Office, Magee Hospital, Pittsburgh, Pennsylvania.

# THE ABUSE OF VASOCONSTRICTORS IN HAY FEVER AND VASOMOTOR RHINITIS

LOUIS STERNBERG, M.D., New York City

WITH the introduction of epinephrine, ephedrine, and numerous related synthetic compounds into the pharmacopoeia, the use of nasal vasoconstrictors began to multiply. Not only are they now often prescribed by physicians, but are also sold readily behind the drug counter directly to the patient.

Gray<sup>1</sup> and Negus<sup>2</sup> state that ciliary motility is greatest when the pH range is at 8.2-8.6, and then slows down in slightly acid solutions when the pH is at 6.5 or less. Fabricant<sup>3</sup> finds that a medicament is more bactericidal when slightly on the acid side. The same author also quotes Stark,<sup>4</sup> who has shown that isotonic solutions are less irritant to the mucous membranes.

Vaughan,<sup>5</sup> Rackemann,<sup>6</sup> and Turner<sup>7</sup> suggest the use of vasoconstrictors in hay fever and vasomotor rhinitis, but do not mention contraindications to their use. Ballenger and Ballenger<sup>8</sup> find that a 1 to 3 per cent ephedrine solution does, in very rare instances, cause irritation and sneezing in vasomotor rhinitis. Barnhill<sup>9</sup> observes that cocaine and ephedrine often increase the severity of hay fever symptoms. Hansel<sup>10</sup> believes that the prolonged use of nasal sprays may increase the sensitivity of the mucous membranes. Scarano<sup>11</sup> finds that the continued use of ephedrine and benzedrine may create secondary reactions of "atony, returgescence, and bogginess of the nasal mucous membranes." Urbach<sup>12</sup> claims that vasoconstrictors occasionally exacerbate symptoms of hay fever instead of relieving them. Cooke<sup>13</sup> suggests ephedrine in a 1 per cent spray for the symptomatic relief of hay fever, but cautions against too frequent and prolonged applications. Grove<sup>14</sup> holds the same opinion. King and King<sup>15</sup> claim that "shrinking solutions are harmful to some patients" and that they are being overused.

During the past six years a number of patients have come to my attention whose nasal discharge and obstruction were definitely more the result of the abuse of various vasoconstrictors than of the underlying vasomotor rhinitis or seasonal hay fever. It appears that the allergic mucous membrane becomes refractory when in frequent and prolonged contact with these drugs for a variable period of time (three to five days), and then remains waterlogged no matter how often the vasoconstrictor is reapplied. At other times

those membranes become irritated and inflamed from the same cause. On and off a combination of these two phases can also be the result of sustained application of a vasoconstrictor. Not only is the patient at this stage not relieved from his distressing symptoms of hay fever or vasomotor rhinitis, but he now begins to feel the effects of the overdose of his drops that were meant to give him relief. Injury is added to insult and suffering and discomfort is the result.

## Case Reports

The following case histories will illustrate my point.

*Case 1.*—Mrs. I. D., 46 years old, has been suffering from seasonal and nonseasonal hay fever for three years. She had lost her sense of smell and taste for the past ten months. She came in on October 30, 1938, with a vial of nose drops that were sold to her by a druggist during August, when she suffered a great deal. She had been using these drops every hour for the past few weeks to relieve her nasal obstruction, and had to get an ounce bottle every second day to get momentary relief. It seems that very little of the drug was absorbed, for she had no constitutional symptoms in spite of the large dose she was using daily. On physical examination, her nose was found to be obstructed, and the mucous membranes were waterlogged and markedly inflamed. Skin tests were positive to house dust and ragweed. She was advised to give up her drops, and her relief was marked within one week.

*Case 2.*—J. R., 34 years old, a baker by occupation, was seen in March, 1943, with a history of sneezing all year round. His physician had given him drops about a month before, which he applied in his nose every few hours, but instead of being relieved, his condition became much worse. On physical examination the nasal mucous membranes were moderately edematous but markedly inflamed. No pus and no polypi were seen. There were positive skin reactions to wheat, corn, and rye. Symptoms improved 75 per cent upon the elimination of the drops. He was unable to give up his occupation, and is being treated with an extract of the offending inhalants.

*Case 3.*—Miss J. M., 21 years old, came in on August 18, 1943, with a history of early hay fever and pollen asthma. Her skin was sensitive to timothy and plantain, but it was negative to ragweed.

Her physician prescribed ephedrine drops, which she had been using since June. Usually in August she had been relieved of her symptoms, but this year in spite of the "constant use of the medicine"

From the Department of Allergy, Beth Israel Hospital. Presented before the Beth Israel Clinical Society, February 2, 1944.

every few hours, her suffering was intense. On physical examination her nasal mucous membranes were found to be waterlogged. Keeping her nose free from the drops for five days completely relieved her of her nasal complaint.

These case histories can be multiplied many times—and each one the result of the promiscuous use of a vasoconstrictor. These drugs may have their place in acute sinusitis or acute rhinitis, when used for a day or two only, but when indicated in vasomotor rhinitis or seasonal hay fever, they should always be used with discretion. Personally, I prescribe them very rarely, and only when the suffering of the patient is marked. They are then used as a spray in an atomizer, and never applied as drops into the nasal chambers. The patient is always warned of the danger of overdose. They are sprayed into the nose before retiring or during the early morning hours, because symptoms in these patients are usually most distressing then. For if drops are applied into a waterlogged nose while the patient is reclining, the drug will keep on its irritating effects for hours while the patient is in that position. In the spray very little of the drug is used up with each application, and it is also dispersed over a bigger surface at the same time.

Thirty-two of these patients were observed and followed up during the past six years. They used a total of eleven different vasoconstrictors. Of these, nine were in an aqueous solution of an average 1 per cent strength. One had an oily base and also contained camphor, eucalyptol, and menthol. Most of the preparations were isotonic, or approximately so. Since the pH was not indicated upon any of these vials, direct communication with the manufacturers revealed that most of the preparations were slightly acid—pH 4.5–6.5. One was neutral, another slightly

alkaline—pH 7.2. These values are subject to changes dependent on the age and the condition of the preparation. There was no evidence as to which vasoconstrictor did most of the damage. It was only a question of how long, how frequently, and how persistently the drug was applied in order to cause its insult.

### Summary

1. Vasoconstrictors should be applied with discretion when indicated as palliative measures in vasomotor rhinitis or seasonal hay fever.

2. They are to be used as a spray only, and not in the form of nose drops.

3. They should be applied once or twice at most during the twenty-four hours, and saved for the period of the day when symptoms are most severe.

15 Park Avenue  
New York City

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## CHEMICALS OF TUBERCULOSIS EXHIBITED AT YALE

A collection containing more than three hundred chemicals made solely from the bodies of tubercle bacilli, and representing seventeen years of research under the direction of Dr. Rudolph J. Anderson, professor of chemistry at Yale, has been placed on permanent exhibit in the Sterling Chemistry Laboratory at Yale.

Dr. Anderson's epoch-making work has been done in cooperation with other institutions, including Columbia University and Rockefeller Institute.

Further experiment may make it possible to train white blood cells to digest parts of the tubercle bacillus which the phagocytes are normally unable to assimilate. Dr. Anderson's studies have shown that certain parts of the germs, particularly those known as phosphatides, resist the white blood cells,

and this is one reason why tuberculosis is a stubborn disease.

In a discussion of his subject when the exhibit was formally presented to the Sterling Laboratory on February 3, Dr. Anderson remarked, with characteristic frankness, that there is no human use for this idea at this time, and, although heartening experiments have been conducted on animals, how it is to be applied to human disease cannot be stated now.

The exhibit was presented to Yale University by the National Tuberculosis Association, under whose auspices the work has been done, and the new chemical substances represented in the exhibit open new fields of study in chemistry and offer an opportunity for advancement in therapeutics, the value of which cannot be forecast.—*Connecticut State M. J.*, March, 1944

# Case Report

## THE ADRENAL CORTEX IN MYASTHENIA GRAVIS

R. PIETRI, M.D., New York City

IN JULY, 1940, Moehlig<sup>1</sup> reported a case of myasthenia gravis that had a prompt remission following the implantation of de-oxyecorticosterone acetate pellets (hereinafter to be designated as "d.a.>").

In November of that same year I buried 450 mg of d.a. in the subcutaneous tissues of a colored patient who had been under treatment for some time. The improvement obtained was prompt and clear-cut, leaving no doubt in my mind at the time that it had been brought about by the hormone. Unfortunately, there were no preliminary studies made on this patient for the purpose of determining adrenal function.

Four other cases that came under observation subsequently were given the benefit of these studies and the results are analyzed below. All four failed to show any impairment of adrenal function as determined by the Cutler, Power, and Wilder<sup>2</sup> test. One case (Case 2) reacted poorly to high sodium chloride intake and two cases (Cases 2 and 3) were thrown into crisis by the injection of d.a. subcutaneously. Two cases (Cases 4 and 5) showed no response, favorable or unfavorable, to the high salt diet or to the injection of d.a. One case (Case 2) showed no effects, deleterious or other, from the implantation of the pellets of d.a.

It is clear from the results obtained that not only was there no deficiency of d.a. in Cases 2, 3, 4, and 5, but that they could be made worse (two cases) by a high salt intake or the parenteral administration of the hormone. The absence of reaction to the high chloride intake or hormone in the last two cases, as compared to Cases 2 and 3, might be explained by the fact that they were definitely milder. Conversely, the absence of reaction to implanted pellets in one severe case may be explained by loss of potency or by absorption too slow to cause ill effects.

It is not strange that d.a. failed to help, inasmuch as a study of its pharmacologic action leads one to expect negative results. Wells and Kendall<sup>3</sup> found that this hormone causes a drop in the concentration of K, an element essential in muscle function, in the blood serum of rats.

Loeb and his associates,<sup>4</sup> studying its action on dogs, observed "a peculiar weakness" when d.a. was given together with a high salt intake. Why, then, the apparent recovery in the first case? It may be that the patient was about to have a remission when the implantation was carried out. Such a coincidence is possible, but not probable, as the improvement was immediate and not gradual. Furthermore, an attempt made to discontinue prostigmin medication a few days before the operation resulted in full return of symptoms and at no time was she able to be up and about mornings unless she took her tablets one hour before arising. On the other hand, should we accept the beneficial effects

of the implantation, how can we explain the relief of symptoms long after the tablets should have been totally absorbed, seven months being the longest calculated period according to Soffer and his associates?<sup>5</sup> Yet this woman is better now, thirty-five months after the implantation, than she was at any time during the first half year.

Although so far the evidence is mostly against the usefulness of d.a. in myasthenia gravis, we cannot overlook Moehlig's case and the first one reported here. And the fact that the other cases did not respond to d.a. does not necessarily mean that there was no adrenal disorder. Other substances extracted from the adrenal cortex (cortico-terone or the cortin fraction<sup>6</sup>) will cause a reduction in the size of the thymus, an organ considered by some to be directly related to the cause of myasthenia gravis. The literature on this subject is reviewed by Blalock and his associates<sup>7</sup> in a paper describing the results of thymectomy.

### Case Reports

Case 1—V. H., age 35, a colored married woman, day, 1937. In 1937 she developed myasthenia gravis and she complained of diplopia. In August, muscular weakness began and rapidly became so severe that she was unable to walk without assistance and she developed a sense of great muscular fatigue on slight exertion. The patient had noticed for some time that there was a "drooping" of the eyelids at there

The neurologic examination showed marked weakness of all muscular groups with almost complete bilateral external ophthalmoplegia and ptosis. No sensory changes or disturbance of coordination were elicited. Routine laboratory tests were reported as negative.

An injection of prostigmin gave the patient definite though not very marked relief within a few minutes. She was discharged from the hospital with a diagnosis of myasthenia gravis. At different times she received vitamin B<sub>1</sub> and vitamin B<sub>12</sub>. The last was the most decided value and she eventually remained on that one drug alone. Up to November, 1940, she was kept fairly comfortable on 30 mg. twice daily by mouth. On several occasions she attempted to stop the medication but was unable to do without it.

On November 9, 1940, nine pellets of d.a. of 50 mg. each were implanted in the subcutaneous tissues of the abdomen. Two days after the operation the prostigmin was withdrawn and since that time the patient has been without it. The following notes were made nine days after the operation: "the patient has not taken prostigmin for the last seven days, yet shows no need for it, she can move the facial muscles well, walks with ease, and the eye movements are as good as when she was taking

prostigmin." Eleven days after the operation she was discharged from the hospital and since then she has been followed regularly at the clinic.

She was last seen August 6, 1943, thirty-five months after the implantation. Her strength continued to be good in all extremities as well as in the face, tongue, and throat. Movements of the eye muscles were slightly restricted in the upper gaze and there was partial left ptosis.

*Case 2.*—G. B., a 22-year-old woman, was admitted to the Neurological Institute on August 4, 1941, complaining of increasing weakness and fatigability. Sometime in 1935 the mother first noted that her speech was not clear and that at times her voice sounded like a horn. Soon there followed difficulty in swallowing and liquids would come out of the nose. Sometime later weakness in the legs, arms, and hands appeared, together with a dead expression in the eyes. She lost weight, going from 119 pounds to 105 pounds. Early in 1937 her breathing became affected, the eyes looked tired and watery, and finally she had to leave school. Examination revealed the typical findings of myasthenia gravis and the results of a therapeutic test with prostigmin were prompt, the patient improving markedly within a few minutes. For several months it was possible to keep her comfortable by administering 30 mg. of prostigmin with tincture of belladonna three times a day. Then her condition gradually became worse and the relief from prostigmin medication by mouth was less and less. In 1939 she was troubled with double vision and during the first six months of 1941 her dysphagia became more distressing, with increasing shortness of breath. Twelve hours before her admission her respiratory difficulty was so severe that it was necessary to administer oxygen. The past personal and the family history are noncontributory.

**General Examination:** The Blood pressure was 92/60. The patient was thin and pale and appeared to be chronically ill. Hypertrichosis was present in the lower extremities and the crines had male distribution. No pigmentation suggestive of Addison's disease was present. The left lobe of the thyroid was enlarged.

**Neurologic Examination:** Findings were typical, including severe general weakness, feeble and unintelligible speech, expressionless face, some limitation of the upward movements of the eyes, and bilateral ptosis. There was also some difficulty in swallowing and the tongue could not be protruded. Urine creatinine was 148 and the creatinine, 775. Other laboratory tests, including blood count, blood chemistry, and urinalysis, were negative.

**Course:** For a few days after admission the patient was given prostigmin by injection every four hours, with ephedrine by mouth three times a day. With this medication she improved considerably so that she was able to get up and around and eat fairly well. Once these results were obtained she was given the test for adrenal function, described by Cutler, Power, and Wilder.<sup>2</sup> The outcome of this test was a chloride concentration in the urine of 51.2 mg. per 100 cc. on the third day, therefore revealing adrenal function to be within normal limits. A few days later she was placed on a high sodium chloride intake, accomplished by intravenous injections of 20 Gm. of salt daily. No improvement followed; on the contrary, the patient was made weaker and it was necessary to increase the prostigmin dosage. After another period of rest, 5 mg. of d.a. were given by hypodermic injection on three successive days. The results were as bad as they

were with the high sodium diet and had to be discontinued. Not satisfied with the results and hopeful that there might be a difference in the mode of action between the hypodermic injections and the implanted pellets, I decided to carry out the latter procedure. On September 13, 1941, two 50 mg. pellets were implanted in the abdominal wall. Since no change at all was noted in her condition, on October 8, six fresh pellets were placed in the other side of the abdomen. She was finally discharged on December 3, eight weeks after the second implantation, having shown absolutely no effects, good or bad. An increase in the dose of prostigmin was not necessary, nor were we able to cut down on the medication.

*Case 3.*—L. B., a white girl, aged 11 years, was admitted to Fitkin Memorial Hospital, in Neptune, New Jersey, on August 17, 1942. She had first complained of general weakness about one year before. This weakness gradually increased, so that two months prior to admission she began to fall and have difficulty in going up and down stairs. She was less tired in the mornings and after resting she recuperated. About the same time her mother began to notice some drooping of the lids and weakness in her smile. She was less tired in the mornings and after resting she recuperated. When she was hurt in any way, her cry was weak. At about the same time she had difficulty in swallowing and her speech became thick. She has had double vision while in the movies and difficulty in keeping her eyes open. The neurologic examination revealed the definite findings of myasthenia gravis with expressionless face, thick speech, and drooping lids. Routine laboratory studies revealed nothing of significance. Basal metabolism was reported as minus 20; cholesterol, 140 mg. per cent. X-rays of the chest did not show an enlarged thymus. Chronaxie studies of the facial muscles revealed nothing abnormal, but after fatigue by faridization of the frontalis the chronaxie showed rapid exhaustion (Jolly reaction). Adrenal function was studied by means of the Cutler, Power, and Wilder test and was found to be normal—122 mg. of chlorides per 100 cc. of urine on the morning of the third day. One day of rest was allowed, after which, for a period of three days, she was put on a high salt diet by adding 20 mg. sodium chloride daily to the regular diet. On the third day this amount of salt had to be given by intravenous injection and was followed by a constitutional reaction which was considered to be due not to the chlorides but to the solution itself. After a short rest she was given 5 mg. of d.a. by hypodermic on two successive days and on the third day it was increased to 10 mg., without noticeable effect. On the morning of the fourth day the patient was again given 10 mg. and that afternoon there was a very severe reaction, with rapid breathing and thready pulse and inability to swallow or even to expectorate mucus. Following the injection of 1 mg. of prostigmin there was rapid improvement, with dropping of the respiration and pulse to normal. In order to substantiate the nature of this reaction she was allowed to go without any more prostigmin. About eight hours later she went into a similar state and again she recovered within a few minutes following prostigmin medication.

*Case 4.*—Mrs. L. T., a white woman, was first seen by me in February, 1941, when she was 21 years old. She gave a typical history of myasthenia gravis, with general weakness, initiated by drooping eyelids, which had started early in 1938. Eighteen months after the onset she was unable to bring

food to her mouth and there was difficulty in swallowing or chewing. There also developed diplopia and facial weakness and finally weakness of the lower limbs. The examination confirmed the impression obtained from the history and the response to prostigmin was definite. For the next two years she was kept active by the administration of prostigmin and ephedrine by mouth. On March 15, 1943, she was admitted to the Neurological Institute for studies. Routine laboratory tests were reported as negative; the basal metabolism was 0 and the x rays of the chest did not show enlargement of the thymus. The Jolly's reaction was positive in all the muscles tested.

She was given the Cutler, Power, and Wilder test for adrenal function and the urine on the morning of the third day was reported as containing 13.6 mg per 100 cc, a figure well within the normal. After a day's rest 20 Gm of sodium chloride daily were added to the regular hospital diet for three successive days. There was no unusual reaction. Again she was allowed to rest for one day and then was given 10 mg of d-a for two consecutive days. As no effect was noted, the same dose of d-a was given on the third day but all other medication was stopped. That afternoon she was observed to be unable to smile or swallow well and her general power was markedly diminished; it was necessary to give an injection of prostigmin.

Case 5—B. P., a 17-year-old white boy, was admitted to the Neurological Institute on April 28, 1943, with a history of double vision and drooping of the lids, beginning in the fall of 1940. The double vision had lasted only about two weeks, but since then he had found it necessary to turn the head when he wished to look to the side. These complaints were much less noticeable in the first half hour after arising in the morning. On examination, the only positive findings were bilateral ptosis and marked impairment of the extra-ocular movements. Injection of prostigmin hypodermically produced

considerable improvement within ten to fifteen minutes. Routine blood and urine tests were negative. Creatinine excretion was found to be 28 mg and creatinine 1,605 mg in twenty-four hours. X rays of the skull were reported to be normal.

As in the last three cases, the Cutler, Power, and Wilder test revealed normal adrenal function—50.5 mg per 100 cc of urine on the morning of the third day. A high sodium chloride intake (20 Gm daily) was then tried for three days without noticeable effect. After a short rest d-a was given hypodermically in 10 mg doses daily for three days and in 20 mg doses daily for three days more without causing any improvement or undue reaction.

### Summary

Five cases of myasthenia gravis are described, one of which was apparently improved greatly by implantation of d-a pellets. In this case no preliminary studies of adrenal function were made. The other four patients showed no deficiency of d-a secretion, one of them reacted poorly to a high salt intake, and two cases were aggravated by d-a given intramuscularly. The possibility that other fractions of the adrenal cortex may be involved is discussed.

A word of caution is in order: the implantation of d-a pellets in myasthenia gravis should be preceded by studies of adrenal function and trial injections.

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### CADET NURSES CELEBRATE BIRTHDAY

July 1 has been designated the official birthday of the U S Cadet Nurse Corps. Dr Thomas Parran, Surgeon General of the U S Public Health Service, Federal Security Agency, has announced. The first anniversary was celebrated this year.

Youngest and largest of the women's uniformed organizations in the country, the corps now boasts a membership of nearly 100,000 young women, all pledged to remain in essential nursing—either civilian or military—for the duration of the war.

These recruits, identified by their Montgomery berets and their trim gray uniforms marked by silver Maltese crosses and red epaulets, are helping to make it possible for hospitals to release graduate nurses for specialized positions on the home front and behind the fighting lines.

In 1,065 schools of nursing across the country these young women, from all walks of life, are already contributing greatly to the wartime nursing program as they prepare to be nurses. Dr Parran said. They come directly from high school graduations, from colleges, from business offices, and are wives and sisters of fighting men, daughters of war

workers, farmers, and professional men, Dr Parran added.

Special tribute to the schools of nursing where d was paid by

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first year of the U S Cadet Nurse Corps," Dr Parran said.

Because of the heavy study and work schedules in hospital schools, only simple ceremonies were planned for the corps' first birthday. Special events were held in New York, Chicago, Hollywood, Fort Worth, and several other cities. For the most part, celebrations were limited to teas, dinners, or other parties arranged by the individual schools of nursing. A birthday cake decorated with the emblem of the corps was the center of interest at many affairs. Sharing in some of the observances were prominent State and community officials—  
Relieve from the Office of War Information

# Case Report

## TREATMENT OF PSEUDO-EPILEPSY

F. D. BROWN, M.D.,\* Hobart, New York

THE symptoms and treatment of two patients afflicted with pseudo-epilepsy are given in the following report. This demonstrates the possibilities that are open to the physician who will individualize his study of these interesting and all-too-often neglected cases. Since the cause and cure of a case presenting pseudo-epileptic symptoms have not as yet been proved, any safe method of therapy is most welcome to the harassed patient.

True idiopathic epilepsy can be ruled out by the classical history, a clinical test, and the encephalograph. It is also generally recognized that hypothyroidism, calcification of the adrenals, cerebral cortical lesions, and adenoma of the pancreas may bring on epileptiform or pseudo-epileptiform attacks.

Cases not in the above categories, however, present a problem the successful solution of which requires sympathetic understanding by the physician in each individual case and careful treatment usually over a long period of time.

### Report of Cases

*Case 1.*—The patient was a clerk aged 25. Following an attack of scarlet fever at the age of 15, he was afflicted with so-called epileptic attacks. For six months he received gradually increasing doses of phenobarbital but this treatment failed to prevent the frequency and severity of the seizures, which were occurring almost once a week and which fitted a textbook description of an epileptic attack with the exception of the history of onset after scarlet fever. The rest of the history was negative, as were both the mental and the physical examinations.

Since the patient was not improving under phenobarbital and dilantin sodium combinations, it was decided to give him an ampule of scarlet fever antitoxin. Because he had never had any symptoms prior to his severe attack of scarlet fever, it was felt that he did not have true idiopathic epilepsy. Hence, after a negative ophthalmic and intradermal test, the antitoxin was injected into the gluteal muscle. Five days after the injection, the patient developed a

severe serum reaction with a rectal temperature of 104 F., pulse 120 per minute, a polyarthritis, and a generalized urticaria. No medication was given to modify the reaction. This subsided gradually over a period of five days. At this time, one kapsel of dilantin sodium after breakfast and phenobarbital,  $\frac{1}{2}$  grain at bedtime, were started. At the end of two months these were discontinued. In the following two years, he had only one attack. This occurred three months after the antitoxin injection when he had overworked for about a week.

*Case 2.*—A housewife, aged 48, complained of epileptic attacks since childhood. Antispasmodic treatment during the preceding year had not been successful unless she took large doses of phenobarbital. The attacks would occur once or twice a month and consisted of falling and then a tonic convulsion which soon changed to the clonic type. The attacks never lasted more than three to five minutes. Control of the anal and vesicle sphincters was not lost.

At 23 years of age she had a normal pregnancy and delivery. During her pregnancy and for two years thereafter she suffered no attacks. The rest of the history and examinations were negative. Despite the history of the early onset of her attacks, it was not felt that she had true epilepsy because of the nature of the episodes. Since she had not been afflicted during her pregnancy and for two years thereafter, it was decided to try antuitrin-S. Accordingly, 3 cc. were given every other day for two weeks, then 2 cc. every third day for two weeks, until at the end of two months she was giving herself 1 cc. per week. Treatment did not effect normal menstrual periods. At the time of writing this patient has been free from symptoms for one and one-half years.

### Conclusions

1. The possibility of attacks with definite cause and responding to specific therapy should be eliminated.
2. Patients having pseudo-epilepsy may still be benefited without a life sentence to antispasmodics.
3. It is hoped that this brief report may stimulate physicians to further individualized clinical study of pseudo-epilepsy.

\* Since writing this paper Dr. Brown has joined the armed services as a captain in the Medical Corps of the United States Army.

### REFRESHER COURSE IN OTOLARYNGOLOGY IN CHICAGO

The University of Illinois College of Medicine announces that its fall didactic and clinical refresher course for specialists in otolaryngology will be held at the College from September 25 to 30, inclusive.

Since registration is limited to twenty-five, applications should be filed as early as possible. Write for information to Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.



# Case Report

## ACUTE INFECTIOUS MONONUCLEOSIS WITH HEPATITIS

### Presentation of Two Cases

MILTON H. MORRIS, M.D., ABNER ROBBINS, M.D., AND EDWARD RICHTER, M.D.,  
Far Rockaway, New York

THE protean manifestations of infectious mononucleosis have at times puzzled the internist. The delayed and variable hematologic findings, together with the inconsistency of the Paul-Bunnell heterophile reaction, only add to the confusion of the clinical picture in the early stages of the disease. The original description of Pfeiffer emphasizes the diagnostic triad of glandular fever as glandular enlargement, high temperature, and mononucleosis.

Drs. J. Shafar and J. C. Weir<sup>1</sup> describe infectious mononucleosis with a clinical picture dominated by meningeal symptoms. Other cases of the disease in which abdominal or cerebral manifestations have been prominent are presented in the literature. An asymptomatic or abortive type is also mentioned as a distinct clinical picture. It is the opinion of Shafar and Weir that there may be separate and distinct clinical varieties of the disease.

The association of infectious mononucleosis with jaundice was first mentioned by Downey and McKinley<sup>2</sup> in 1923, emphasized by de Vries in 1938, and more recently brought forward by Martin, Carter, and Gold<sup>3</sup> in 1941 and 1942.

McKinley<sup>4</sup> in 1935 reported jaundice five times in 50 cases, but Bernstein's<sup>5</sup> group of 65 cases included only one with this finding. Excepting Martin's<sup>6</sup> figure of 13 previously reported cases, including the recent additions, there are, up to date, reported in the literature 21 cases of infectious mononucleosis with jaundice.

The cause of the jaundice is assumed by the above authors to be associated with biliary obstruction, as a result of the pressure of the enlarged lymphatic glands in the hilum of the liver. These cases were at some time during the course of the disease associated with glandular adenopathy and most often the appearance of the jaundice coincided with the generalized adenopathy.

DeVries<sup>7</sup> recognized three types of jaundice in glandular fever: (a) "forme ictérique à début ganglionnaire", in which the glandular enlargement was prominent and jaundice developed during the course of the disease; (b) a "forme à début ictérique", in which the jaundice was the first symptom and glandular enlargement followed; and (c) very rare cases in which jaundice and pyrexia were the only symptoms and the diagnosis rested on the hemato-

logic findings and the Paul-Bunnell heterophile reaction.

DeVries reports two cases representative of types (a) and (b) and explains that jaundice found in the above-mentioned cases is the result of portal obstruction.

We wish to report two cases of acute infectious mononucleosis with jaundice which fall into group (c), in that they were associated with pyrexia and the absence of glandular enlargement and in which confirmatory laboratory studies revealed the jaundice to be the result of a true hepatitis.

### Case Reports (See Table 1)

**Case 1.**—H. P., a man aged 23, was admitted to St. Joseph's Hospital, Far Rockaway, New York, on November 17, 1943. His chief complaints were chills, fever, and severe pain in the right upper quadrant of the abdomen.

**Physical Examination:** Physical examination showed him to be a well-nourished white man appearing acutely ill. There was an icteroid discoloration of the conjunctivae. A fine yellowish discoloration of the skin was also present. There were no evidences of glandular enlargement. The spleen was not enlarged. The abdomen was slightly distended and there was tenderness in the upper right abdominal quadrant. The liver was palpably 2 cm. below the right costal margin. The physical examination was otherwise normal.

**Laboratory Reports:** A flat x-ray plate of the abdomen showed all soft tissue detail to be obscured by intestinal gas. No calcified or other shadows were disclosed.

Other laboratory findings were: On October 18, 1943, phosphorus was 2.9 mg. per 100 cc.; phosphatase, 18.2 units; nonprotein nitrogen, 40 mg. per 100 cc.; icterus index, 30 units. The van den Bergh reaction was immediate, direct, and weak. The urinalysis showed no leucine or tyrosine crystals.

The bleeding time was three minutes, the clotting time three and a half minutes; the prothrombin time was thirteen seconds; the platelet count was 180,000, and the fragility test showed that hemolysis began at 0.4 and was complete at 0.3 per cent saline.

The Widal O and H typhoid test and the paratyphoid A and B test were negative. The brucella agglutination test and the Proteus OX10 test were negative. Hydrobilirubin was present in the stool; the stool culture was negative for enteric organisms. The blood count: hemoglobin, 108.4 per cent, red blood cells, 5,150,000, white blood cells, 11,700; polymorphonuclears, 25

Director of the Department of Medicine, St. Joseph's Hospital, Far Rockaway.

Associate in Medicine, St. Joseph's Hospital, Far Rockaway.

Associate in Medicine, St. Joseph's Hospital, Far Rockaway.

per cent; lymphocytes, 33 per cent; monocytes,\* 42 per cent.

The urine was a dark orange color; specific gravity was 1.015. A trace of albumin was present; there was no sugar or acetone. A number of bacteria were found. A few white blood cells and bile were present. The tests for urobilin and urobilinogen were strongly positive.

On October 19 Weil's test showed no agglutination in dilutions of 1:10 to 1:1280. On October 21 the blood count was: white blood cells, 16,500; polymorphonuclears, 22 per cent; lymphocytes, 16 per cent; monocytes and immature cells, 62 per cent. On October 22 the blood count was: white blood cells, 16,500; polymorphonuclears, 26 per cent; lymphocytes, 39 per cent; immature cells identified as monocytes, 35 per cent. The Kline test was negative.

On October 23, 1943, the cephalin flocculation test was 3 plus. The icterus index was 28 units. On October 26 the urine showed a yellow color; acid reaction; specific gravity of 1.003; no albumin; no sugar; no acetone; urobilinogen strongly positive.

On October 27 the icterus index was 17 units; the van den Bergh test gave no reaction; the stool culture was negative for ova and parasites. The blood count: white blood cells, 12,000; polymorphonuclears, 22 per cent; lymphocytes, 30 per cent; eosinophils, 1 per cent; atypical mononuclear cells, 47 per cent.

On October 29 the cephalin flocculation test was 3 plus. Heterophile reaction: sheep cells agglutinated up to serum dilution of 1:64.

Clinical Course: The temperature varied from 100–101 F. down to normal during the patient's stay of about two weeks at the hospital. The pulse fluctuated between 70 and 80 to the minute. The respirations were normal. The abdominal pain gradually subsided. The liver edge was still palpable at the time of discharge and there was still an icteroid tinge to the sclerae. The blood picture still showed neutropenia with monocytosis. Clinically the patient was well.

Case 2.—S. N., a physician aged 37, was admitted to St. Joseph's Hospital, Far Rockaway, New York, on November 12, 1943. His chief complaints were severe pain in the small of the back, chills, and high temperature.

Relevant History: The patient had been ill for four days prior to admission into the hospital and had taken 105 grains of sulfamerazine without any apparent effect.

Physical Examination: Physical examination revealed an obese white man, apparently acutely ill. The abdomen was obese and palpation of liver and spleen was difficult. No glandular adenopathy was found, except for an icteroid tinge to the conjunctivae.

Laboratory Reports: Portable x-ray of the chest showed a thin haziness at the left base, suggesting an early pleural reaction of a minimal degree. There was no evidence of fluids in the chest. There were no areas of pneumonitis.

On November 12, 1943, the typhoid O and H, paratyphoid A and B, brucella and Proteus OX19, tests showed no agglutination. The icterus index was 30 units. On November 13, 1943, the heterophile reaction showed sheep cells agglutinated up to serum dilutions 1:4. The Widal test was neg-

\* Many of the monocytes were atypical, some resembling intermediate cells, others immature monocytes and lymphocytes. Repeat smear requested.

TABLE 1

	Case 1	Case 2
Phosphorus	2.9 mg./100 cc.	Test not done
Phosphatase	18.2 units	Test not done
Nonprotein nitrogen	40 mg./100 cc.	25 mg./100 cc.
Icterus index	30 units	37.5 units
Urine crystals	No leucine or tyrosine	No leucine or tyrosine
Bleeding time	3 minutes	3 minutes
Clotting time	3½ minutes	5 minutes
Prothrombin time	13 seconds	15 seconds
Platelet count	180,000	200,000
Fragility	Hemolysis begins at 0.4 per cent and is completed at 0.3 per cent	Hemolysis begins at 0.42 per cent and is completed at 0.32 per cent
Widal	Negative	Negative
Paratyphoid A & B	Negative	Negative
Brucella	Negative	Negative
Proteus OX19	Negative	Negative
Kline	Negative	Negative
Stool hydrobilirubin	Positive	Positive
Stool culture	Negative for enteric organisms	Negative for enteric organisms
Cephalin flocculation	3 plus	3 plus
Heterophile	Sheep cells agglutinated up to serum dilution 1:64	Sheep cells agglutinated up to serum dilution 1:32
Weil's disease	Negative	Negative
van den Bergh	Weak, immediate, direct	Delayed, direct, weak
Parasites	Ova and parasites —negative	Ova and parasites negative — Salmonella (non-pathogenic)

ative. The stool culture showed Salmonella (non-pathogenic). Hemolysis began at 0.42 per cent saline and was complete at 0.32 per cent. Bile was present in the urine, which was brownish in color. The reaction was acid, and the specific gravity was 1.030. No albumin, sugar, or acetone was present. Microscopic examination revealed many mucous threads, squamous epithelium, calcium oxalate crystals, and occasional red and white blood cells.

The blood count: hemoglobin, 90.9 per cent; red blood cells, 5,140,000; white blood cells, 5,050; polymorphonuclears, 40 per cent; lymphocytes, 43 per cent; monocytes, 15 per cent; juveniles, 2 per cent. The blood smear was negative for malaria; the prothrombin time was 15 seconds.

On November 15 the icterus index was 37.5 units; the van den Bergh reaction was delayed, direct, and weak. The urine culture was negative for typhoid and brucella. The blood count: white blood cells, 7,100; polymorphonuclears, 47 per cent; lymphocytes, 43 per cent; monocytes, 8 per cent; juveniles, 2 per cent; many endothelial cells were noted.

On November 17 the blood culture showed no growth in five days. No enteric organisms were found in the stool culture. Slight hemolysis was present, according to the icterus index.

The cephalin flocculation test was 3 plus, and the van den Bergh test gave no direct reaction. The blood count: hemoglobin, 89.3 per cent; red blood cells, 4,850,000; polymorphonuclears, 13 per cent; lymphocytes, 64 per cent; monocytes, 23 per cent.

On November 23 the icterus index was 15 units. The typhoid O and H, paratyphoid A and B, brucella, and Proteus OX19 tests all showed no agglutination. The stool culture was negative for enteric organisms. The heterophile reaction showed sheep cells strongly agglutinated up to serum dilutions of 1:32.

Clinical Course: The patient remained at the hospital for seventeen days. For the first three

days his temperature ranged in the neighborhood of 104 F. and then dropped, assuming a low-grade character until just before his discharge. The pulse varied between 70 and 90. The respirations were normal. After the seventh day the patient improved clinically.

At the time of his discharge the icterus had disappeared and the only complaint was that of fatigue and weakness.

### Discussion

The two cases described present certain features in common—viz.: jaundice, an unusual blood picture with neutropenia and monocytosis, a delayed Paul-Bunnell heterophile reaction, a variable van den Bergh reaction, one case showing an immediate direct reaction and the other a delayed direct reaction, but both reactions were weak and became negative in a short time, and an absence of glandular adenopathy. Case 1 presented the additional feature of an enlarged and tender liver. In Case 2, because of the obesity of the patient, it was impossible to palpate any of the abdominal organs.

The laboratory data were very similar and were indicative of parenchymal liver damage. The absence of hemolysis and an increased urobilinogen associated with a strongly positive cephalin flocculation reaction is confirmatory of liver damage. The fall in the plasma prothrombin is also a sign of early hepatic dysfunction. Kaplan, Stewart, and Lyons<sup>8</sup> demonstrated this early fall in their

studies of hepatic disturbances as a result of sulfonamide therapy.

### Conclusion

1. Infectious mononucleosis may present a bizarre clinical picture and often requires considerable laboratory study, as was the necessity in the afore-mentioned cases.

2. The association with jaundice is a rare occurrence and serves further to obscure the clinical picture.

3. The cases of infectious mononucleosis described in the literature explain the jaundice as a result of pressure of enlarged glands in the hilum of the liver, the so-called regurgitant type.

4. We have presented two cases of infectious mononucleosis with jaundice in which the jaundice was dependent on actual parenchymal liver damage.

5. Infectious mononucleosis with hepatitis is a definite clinical picture and may occur without the presence of adenopathy and may require considerable laboratory study for its interpretation.

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### STUNG BY VITAMIN BILE

Don't look now, but you are in the midst of the greatest vitamin boom of all time. There was a period when we considered a vitamin as a small atomic organic substance found only in minute amounts in food, now what have we?

Vitamins can be bought by the barrel and are in every drug and department store and in some grocery stores. Vitamins are being added to various foods to make them more attractive and nutritious.

It is even rumored that vitamin B will soon be added to gasoline if they can find some reason for it. The height of chicanery was reached a short time ago when a local drugstore opened a "Vitamin Bar," the inference being that one may get a snootful of gelatin highballs and have a round of fun without the usual 4 m. residual.

The newspapers, magazines, and radios are all playing their part in distributing misleading facts about the virtues of certain vitamin products. The following are some of the more common ones:

"Vitamin B is the most important vitamin for the human body. It is found in almost all foods. It is essential for the normal growth and development of the body. It is also essential for the normal functioning of the nervous system. It is therefore, a very important vitamin for the human body."

and have received the seal of approval of Light

Housekeeping magazine. Remember, s-t-u-n, spelled backwards, is n-u-t-s." (You can say that again.)

The medical profession has allowed the vitamin situation to get out of bounds so that very little scientific control of administration is exercised. Many times it comes under the head of nonspecific therapy. The indiscriminate use of vitamins may have been enhanced by a recent diagnostic innovation called "subclinical deficiency states." After all, there is considerable glutin in these products, which in itself is an excellent protein substitute, lacking but two important amino acids, tryptophane and lysine.

It is also true that there are specific vitamin deficiencies, but symptoms such as loss of appetite, nervousness, headache, malaise, fatigue, irritability, and loss of weight are very often on the basis of something more serious than a vitamin deficiency.

Are we allowing our professional approval to be used for a nonspecific therapeutic element to build up big fortunes for pharmaceutical houses, or is there an actual need for this maelstrom of synthetic, gelatin superchargers now glutting the market?—J. Lightbody, M.D., in *Detroit Medical News*

# Honor Roll

## Medical Society of the State of New York

### Member Physicians in the Armed Forces

#### Supplementary List

The following list is the twenty-second supplement to the Honor Roll published in the December 15, 1942, issue. Other supplements appeared in the January 1, January 15, February 15, March 1, March 15, April 15, June 1, July 1, August 1, September 1, October 15, November 15, December 15, 1943, January 15, February 1, February 15, March 1, May 1, May 15, June 1, and July 1, 1944, issues.—*Editor*

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| <p><b>A</b></p> <p>Abraham, K. (Lt.)<br/>Ft. Benj. Harrison, Ind.</p> <p><b>B</b></p> <p>Barnaby, H. C. (Capt.)<br/>Deshon Gen. Hosp., Butler, Pa.</p> <p>Block, A.<br/>7015 Fresh Pond Rd., Ridgewood<br/>27, N.Y.</p> <p>Brooks, L. (Capt.)<br/>2691 Reservoir Ave., Bronx 63,<br/>N.Y.</p> <p>Buckbee, H. F. (Capt.)<br/>Dolgeville, N.Y.</p> <p>Buse, F. W.<br/>Manhasset, N.Y.</p> <p><b>C</b></p> <p>Chapin, S. E. (Lt.)<br/>435 E. 57 St., New York 22, N.Y.</p> <p><b>D</b></p> <p>De Pasquale, M. N. (Lt.)<br/>Ashford Gen. Hosp., White Sulphur<br/>Springs, W. Va.</p> <p><b>E</b></p> <p>Emerson, R. S. (Lt.)<br/>Ft. McClellan, Ala.</p> <p><b>F</b></p> <p>Firestone F. (Lt.)<br/>55th O.T.B., Carlisle Barracks, Pa.</p> <p>Fremont, R. E. (Lt.)<br/>MDRP, Stark Gen. Hosp., Charles-<br/>ton, S.C.</p> <p><b>G</b></p> <p>Gitzelter, L. (Lt.)<br/>A.P.O. 515, c/o Postmaster, New<br/>York 1, N.Y.</p> <p>Glasser, S. M.<br/>234 Greenwich St., Hempstead,<br/>N.Y.</p> <p>Goetzel, P. A.<br/>72-72 112 St., Forest Hills, N.Y.</p> <p>Gritsavage, C. E.<br/>Rockland State Hosp., Orangeburg,<br/>N.Y.</p> | <p><b>H</b></p> <p>Hall, C. T. (Maj.)<br/>70 Wakefield Rd., Eltingville, S.I.,<br/>12, N.Y.</p> <p>Hartman, D.<br/>650 Main St., New Rochelle, N.Y.</p> <p>Hogan, J. J.<br/>1814 W. Genesee St., Syracuse 4,<br/>N.Y.</p> <p>Horn, L. N.<br/>Rockland State Hosp., Orangeburg,<br/>N.Y.</p> <p>Hyman, J.<br/>645 Ocean Ave., Brooklyn 26, N.Y.</p> <p><b>J</b></p> <p>Josephson, G. P.<br/>61-41 Eliot Ave., Maspeth, N.Y.</p> <p><b>K</b></p> <p>Kaiser, A.<br/>6660 74 St., Middle Village, N.Y.</p> <p>Kersten, G. (Lt.)<br/>Wm. Beaumont Gen. Hosp., Box 16,<br/>El Paso, Tex.</p> <p>Kest, L. H. (Lt.)<br/>99 Hooker Ave., Poughkeepsie, N.Y.</p> <p>Kornblum, D.<br/>46-01 43 Ave., Long Island City 4,<br/>N.Y.</p> <p>Kwalwasser, S.<br/>Orangeburg, N.Y.</p> <p><b>L</b></p> <p>Leary, M. E.<br/>827 W. Main St., Rochester 11,<br/>N.Y.</p> <p>Leighton, B. (Lt.)<br/>Station Hospital, Camp Myles<br/>Standish, Taunton, Mass.</p> <p>Levine, B. B.<br/>Wantagh, N.Y.</p> <p>Lipton, B.<br/>Bath, N.Y.</p> <p>Long, C. A. (Lt. Comdr.)<br/>N.A.T.T.C., Memphis 15, Tenn.</p> <p><b>M</b></p> <p>Marganoff, H. (Lt.)<br/>Boston, Mass.</p> <p>Mark, S. M.<br/>36-43 212 St., Bayside, N.Y.</p> <p>Matthias, F.<br/>11 Maple Ave., Bay Shore, N.Y.</p> | <p>McCarthy, R. J.<br/>226 Abbott Rd., Buffalo 20, N.Y.</p> <p>Merz, A. E.<br/>82-15 233 St., Bellerose 6, N.Y.</p> <p><b>O</b></p> <p>Okie, M. V.<br/>2093 Broadway, Sloan, N.Y.</p> <p>Omstead, T. W.<br/>Pearl River, N.Y.</p> <p><b>P</b></p> <p>Pauley, G. E.<br/>9460 220 St., Queens Village 8, N.Y.</p> <p>Philip, A. J. (Lt.)<br/>Fleet Post Office, San Francisco,<br/>Calif.</p> <p><b>R</b></p> <p>Rahman L. (P.A.S. (R) U.S.P.H.S.)<br/>15062 Corona del Mar, Pacific<br/>Palisades, Calif.</p> <p><b>S</b></p> <p>Sainsbury, A. W.<br/>42 N. Main St., Canandaigua, N.Y.</p> <p>Siegel, H.<br/>1845 21 Rd., Astoria 5, N.Y.</p> <p>Singer, F. (Lt.)<br/>Stark Gen. Hosp., Charleston, S.C.</p> <p>Sirkin, J. (Lt.)<br/>Newark, N.Y.</p> <p>Stanbury, R. G.<br/>Akron, N.Y.</p> <p>Stetson, L. A. (Lt. Comdr.)<br/>70 N. Main St., Canandaigua, N.Y.</p> <p>Stevens, R. E.<br/>344 West Ave., Rochester 11, N.Y.</p> <p><b>T</b></p> <p>Teichmann, M.<br/>32-15 30 St., Long Island City 2,<br/>N.Y.</p> <p><b>V</b></p> <p>Villiaume, L. E.<br/>1933 S. Park Ave., Buffalo 20, N.Y.</p> <p>Vince, T. A.<br/>93-01 218 St., Queens Village 8,<br/>N.Y.</p> <p><b>W</b></p> <p>Wilcox, T. R.<br/>Manlius, N.Y.</p> <p>Wildenberg, J. B.<br/>113-14 72 Rd., Forest Hills, N.Y.</p> |
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# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman (428 Greenwood Place, Syracuse), George Baehr, M.D., and Charles D. Post, M.D.*

## "Penicillin Therapy" at Clinton County

POSTGRADUATE instruction on penicillin therapy has been arranged for a meeting of the Clinton County Medical Society to be held Monday, July 3, at 6:30 P.M. in the Hotel Witherill, Plattsburg.

A dinner will precede the meeting.

Dr. L. Whittington Gorham, professor of medi-

cine, Albany Medical College, Albany, will be the lecturer.

This instruction is presented as a cooperative endeavor of the Council Committee on Public Health and Education of the Medical Society of the State of New York and the New York State Department of Health.

## Lecture on Orthopaedics at Massena

THE St. Lawrence County Medical Society met on July 13 at 1:00 P.M. in the Massena Country Club, in Massena, for postgraduate instruction. Dr. Roscoe D. Severance, associate professor of orthopaedic surgery at Syracuse University College

of Medicine, in Syracuse, delivered a lecture entitled "Common Orthopaedic Defects."

It functioned as a . . . New York health

## OPEN SESAME!

The first steps in the making of a doctor are college and medical school education, along with internships. These will not be discussed here. Their cases are quite debatable as to time spent and subjects studied.

It is more interesting to delve into the ways and means of continuously educating oneself. It is amazing and deplorable to see how often medical

... a longer period of training before giving a novice the privilege of practicing, but since Medicine must

Yes—but in part only. Is it by attending clubs, county medical meetings, state or national meetings? Yes—in part only, again. Certainly these are necessary and play a vital part in the continuous process of education. They must never be discontinued.

Naudé has said, "Learning, as with water, is never more fair, pure, and simple than at its source." One of the definitions of Open Sesame is, "a magical key—something that unfailingly opens or admits." Now what can this be? Of course, it is Dr. William Osler's Master Word—"Work." One must study at the source (in postgraduate schools) and be instructed at regular periods, else he runs into a rut, into careless habits and loose thinking. A good athlete, for example, knows he must be instructed often to improve his game. However, some medical men feel that they are being belittled if it is sug-

gested to them that they should become students again. Patients are cognizant of the fact that medicine is advancing by leaps and bounds, and they must demand that their doctors keep abreast of the times. It is necessary that we should be students to the end. This is true of both practitioners and instructors.

It is highly desirable to go forward to postgraduate schooling, to study the progress in the medical arts. Here one sees new experiments and the way the experimenter works. Here one examines new data and is trained in their application. It is most stimulating for one to attend, yearly, some planned advanced course of instruction. If yearly courses are not practical in a given case, then biennial ones can be chosen. In this way one will be searching for the truth and keeping up with it. Dr. William Mayo phrased it thus: "Truth is a constant variable, add a fact and change the outlook, and you have a new truth." In other words, truth is constantly changing—and one must change with change.

which can be carried out by anyone who aspires to attain advanced knowledge of the best in the medical arts. Your practice will not suffer—nor contra-

arts will be required every few years. All would then see the need for the program of continuous education.

It is in this way that we will forge ahead from present imperfect to future perfect—*Max Wolfson, M.D., in California and Western Medicine*

# Medical News

## Recruitment of Physicians for Army, Navy, and Veterans Administration

**R**ECRUITMENT procedures under which the state chairmen for physicians have operated for some time will be changed as a result of the following developments in the needs of the Army, Navy, and Veterans Administration:

1. *Relaxation of Age and Other Requirements of the U.S. Navy.*—The U.S. Navy Medical Corps recently has increased its age limit to 55 years. Physical requirements also have been relaxed, with the result that men who have expressed a preference for Army service may be referred to the U.S. Navy for consideration for commissioning by the Navy.

2. *Requirements of the U.S. Army.*—The U.S. Army Medical Corps will continue to commission for general and limited service men up to the age of 45 who have been declared available by the Procurement and Assignment Service. In exceptional cases the U.S. Army will continue to waive age requirements for men for specific position vacancies.

3. *Requirements of the Veterans Administration.*—Since December, 1943, the need of the Veterans Administration for qualified physicians has greatly increased. Therefore the following plans have been set up:

(a) Physicians under 45 years of age made available to the Army and who are not physically

qualified for duty with Army installations but who meet Veterans Administration requirements will be given Army commissions for assignment to duty with the Veterans Administration.

(b) Physicians under 55 years of age made available to the Navy and who are not physically qualified for duty with Navy installations but who meet Veterans Administration requirements will be given Navy commissions for assignment to duty with the Veterans Administration.

(c) Physicians between the ages of 45 and 63 years who have been declared available for appointment by the Army will be offered commissions by the Army for assignment to duty with the Veterans Administration only, except that those between the ages of 45 and 55 years found physically qualified for general service will be submitted by the Army to the Navy for consideration for duty with the Navy.

(d) Since the Navy will not appoint any physician who has passed his sixtieth birthday for duty with Navy installations or the Veterans Administration, all available physicians between the ages of 60 and 63 should be made available to the Army only for duty with the Veterans Administration.—*J.A.M.A., May 27, 1944*

## Civilian Specialists Appointed to Office of Surgeon General

**N**INETEEN civilian consultants were recently appointed to the Office of the Surgeon General as advisers to the Army Medical Department on problems of internal medicine.

The appointees for the respective specialties are: gastroenterology, Dr. Walter L. Palmer, University of Chicago, and Dr. Chester M. Jones, Harvard University; heart disease, Dr. Paul D. White, Massachusetts General Hospital, Boston, and Dr. Robert L. Levy, Columbia University; skin diseases, Dr. Joseph G. Hopkins, Columbia University, and Dr. John H. Stokes, director, Institute for Control of Syphilis, University of Pennsylvania; infectious diseases, Dr. Colin M. MacLeod, New York University, Dr. W. Barry Wood, Jr., Washington Univer-

sity, St. Louis, Dr. Charles E. Smith, Stanford University, and Dr. Caroline B. Thomas, Johns Hopkins University; chemotherapy, Dr. Chester S. Keefer, Boston University; allergy, Dr. Robert A. Cooke, Cornell University, and Dr. Francis M. Rackemann, Massachusetts General Hospital, Boston; tropical diseases, Dr. Robert B. Watson, principal malarialogist, Tennessee Valley Authority, Dr. James A. Shannon, New York University, Dr. Harold W. Brown, Columbia University, and Dr. Mark F. Boyd, director of the Station for Malaria Research, Tallahassee, Florida; tuberculosis, Dr. James J. Waring, University of Colorado, and Dr. James. Burns Amberson, Jr., Columbia University.—*J.A.M.A., June 24, 1944*

## Dr. Woolley Heads American Medical Women

**D**R. ALICE STONE WOOLLEY, of Poughkeepsie, is the new president of the American Medical Women's Association, having been elected at the recent annual meeting of the association held in Chicago. Dr. Woolley had served as president-elect of the association since its annual meeting of 1943.

Dr. Kate Savage Zerkoss, of Tennessee, succeeded Dr. Woolley as president-elect of the association.

Dr. Woolley is the third woman of the Poughkeepsie area to have been elected president of the American Medical Women's Association. Former presidents of the national organization, which was established in 1915, included the late Dr. Grace N. Kimball, of Poughkeepsie, and the late Dr. Elizabeth B. Thelberg, who was professor of physiology and hygiene, and physician, at Vassar College during the years 1887-1930. Dr. Kimball held the medical

association position during 1922-1923, and Dr. Thelberg in 1927-1928.

A fellow of the American Medical Association, Dr. Woolley is a past-president of the Women's Medical Society of New York State, and has been active on behalf of State and Federal government legislation in the interest of her profession.

During the last war, Dr. Woolley was awarded the Medaille de la Reconnaissance Française by the French government in recognition of two years of military service overseas.

Engaged in general practice in Poughkeepsie now, Dr. Woolley is a member of the courtesy staffs of St. Francis' and Vassar hospitals and the Northern Dutchess Health Center at Rhinebeck. She is a member of the boards of Bowne Memorial and Samuel and Nettie Bowne hospitals, and is vice-president of the former institution.

Dr. Woolley is a director of the Dutchess County

the  
the  
ster,  
American Red Cross A former director of physical  
education at the local Y.W.C.A., she had long been  
actively interested in the work of that association

She is a native of Yankton, South Dakota She  
School of Physical  
of Science degree  
r medical degree  
Surgeons of the

American College of Chest Physicians Elects Officers

A T A business meeting of the New York State  
Chapter of the American College of Chest Physi-  
cians, which was held at the Hotel Pennsylvania,  
New York City, on May 11, the following officers  
were elected for the coming year: president, Dr  
James H. Donnelly, Buffalo, vice-president, Dr  
Samuel A. Thompson, New York City, second  
vice-president, Dr. Foster Murray, Brooklyn, sec-  
retary-treasurer, Dr. Arthur Q. Penta, Schenectady  
At the annual meeting of the American College  
Chicago, Illinois, June  
Buffalo, was elected  
ew York State Dr  
was elected as the  
rm of three years

Physicians from New York State who attended  
the meeting were. Ephraim Korol, Batavia, James  
H. Donnelly, Donald R. McKay, Nelson W. Strohm,  
Buffalo, M. Schochet, Flushing, Chas. Cramer,  
Jackson Heights; Gertrude Silverman, Jamaica,  
Julius Lipson, Lockport, E. Willis Haulen, Mt.  
Morris, Daniel S. Cunnning, Edward P. Eglee,  
Hilton S. Lloyd,  
erome S. Peters-  
ns, Edward H.  
w York City,  
F. Gibbs, Roch-  
nter; Arthur Q.  
Penta, Schenectady; M. Kovnat, Staten Island,  
Horacio E. Perez, Valhalla

Trudeau Medal Awarded to Dr. James Alexander Miller

A HIGHLIGHT of the fortieth annual meeting of  
the  
Chicago, .  
Medal to  
the Board  
tion  
The citation given to Dr. Miller reads in part  
"a distinguished clinician who has given much of his  
life's work in a successful struggle against tubercu-  
losis in the nation's largest city, New York. There,  
having participated in instigating measures com-  
bating tuberculosis, he has had the inestimable joy

of living to see the tuberculosis death rate of 280  
per hundred thousand residents decline to that of  
48"  
Dr. Miller, the first president of the New York  
Tuberculosis Association after its separate incor-  
poration in 1919, has been a guiding influence in its  
work and that of its predecessor, the Committee on  
Prevention of Tuberculosis of the Charity Organiza-  
tion Society, since 1905. He is professor of clinical  
medicine at the College of Physicians and Surgeons,  
Columbia University—*Journal, N. Y. Tuberc. and  
Health Assn*

Officers of State Association of School Physicians

A T HIS recent annual meeting, the New York  
State Association of School Physicians elected  
Dr. Clarence A. Greenleaf, of Olean, to the office of  
president. Dr. Edgar Bieber, of Dunkirk, was re-  
elected vice-president, and Dr. C. Adela Brown,  
of Oswego, secretary-treasurer

Dr. John E. Burke, of Schenectady, former presi-  
dent of the organization, became a member of the  
Executive Committee in place of Dr. Greenleaf  
committee are Drs  
Lewis Wade Heizer,  
vitan, of Rome

County News

Albany County  
Dr. Harold W. Brown, authority on tropical dis-  
eases, discussed their diagnosis and treatment before  
the Albany County Medical Society on May 17  
Dr. Brown is professor of parasitology, at the  
College of Physicians and Surgeons, Columbia Uni-  
versity, New York City. Most of his discussion  
was devoted to malaria and filariasis \*

His first-hand study of tropical diseases in Mexico  
and Guatemala has convinced Dr. Perkins that  
diagnostic and treatment problems, rather than  
the danger of spread of new diseases in New York  
State, will accompany the return of troops from  
tropical theaters of war \*

Dr. James E.  
Communicable I  
Health, has ret  
clinical study spc—  
tion  
Although New York State does not have the neces-  
sary climatic and other factors for spread of tropical  
disease, Dr. Perkins said "a slight increase in  
malaria" might be expected with the returning  
troops

At the meeting of the county society on June 28  
Dr. Joseph S. Lawrence, Executive Officer of the  
Medical Society of the State of New York, spoke  
on the Wagner-Murray-Dingell bill. General dis-  
cussion followed Dr. Lawrence's address.

Nine doctors who are graduates of Albany Medical  
College, class of 1899, held a reunion banquet in  
Albany on May 13  
They were: Drs. George E. Beilby, of Albany,  
Walter A. Leonard, of Cambridge; Karl A. Parshall,

\* Asterisk indicates that item is from a local newspaper

of Brooklyn; George W. Ross, of Port Ewen; Walter H. Sanford, of New York City; W. A. Wardner, of Saranac Lake; and H. J. White, William Kirk, Jr., and J. H. Flynn, of Troy.\*

Effectiveness of the revised Workmen's Compensation Law rests with the medical profession, Dr. Herbert H. Baucus, New York State Medical Society president, declared in an address at the first annual conference of the industrial nurses' section of the New York State Nurse Association in Albany on June 19. The new legislation places regulation, inspection, and investigation phases largely in the hands of local medical societies, he said.

"In communities of less than one million persons, the county medical society has an official status under the law. While the changes are meant for the good of the patient, they will require the co-operation of the medical profession."

He said that the cost of compensation, if paid directly by the employer, actually is a charge against the consuming public. "Inferior medical care prolongs the disability and thus increases this cost."

"It is the desire of the medical profession to reduce the length of disability, to decrease the cost of compensation, while still providing proper care to the injured worker, and thus correct former evils."\*

#### Cattaraugus County

At the June 22 meeting of the county society the following officers were elected: Dr. M. G. Sheldon, of Olean, president; Dr. L. R. Stoll, of Salamanca, vice-president; and Dr. Wendell R. Ames, of Olean, secretary-treasurer.

#### Chemung County

Dr. Ethan Flagg Butler, lung specialist who left Elmira early in 1936, has returned to that city to resume practice.

Dr. Butler left Elmira to become thoracic surgeon to the New York State Tuberculosis Hospitals and was stationed at Biggs Memorial Hospital near Ithaca. Last September 1 he resigned from this position and moved to Syracuse, where he has since been a member of the staff of the Onondaga Sanatorium.\*

#### Chenango County

Fourteen physicians were present for the dinner and meeting of the Chenango County Medical Society held June 13 at the Blue Stone Golf Club. A delicious steak dinner was served the members.

Dr. E. F. Gibson, president of the society, presided. Dr. A. H. Evans, of Guilford, read a paper tracing the history of the county society from its formation in 1806 to the present time. There was also a general discussion of medical topics and the society went on record as opposed to socialized medicine and government control of doctors.\*

#### Clinton County

On May 16, at the Hotel Cumberland, in Plattsburgh, was held the regular semiannual meeting of the Medical Society of the County of Clinton.

The towns of the county were well represented by the physicians present. The meeting was presided over by Dr. Phillip B. Barton. Several matters of interest were discussed and the report of the delegate to the recent meeting of the State Society was given by Dr. Leo F. Schiff.

Miss Emily Creevey, representing the New York

State Nursing Council for War Service, spoke on the importance of maintaining local nurse civilian situations, which are essential, and at the same time furnishing a sufficient quota to the Procurement and Assignment Service for military purposes.

After dinner the members were given a treat by two officers of the Navy who are now stationed at Camp Macdonough in Plattsburgh. R. J. Williams, Commander, USNR, spoke on the "Duties of a Naval Medical Officer Afloat." R. H. Kiene, Lieutenant Commander, USNR, spoke on "Duties of a Naval Medical Officer Assigned to the Marine Corps."

Both of these officers spoke in a very entertaining way of the varied experiences they had had while on active duty and the difficulties encountered under battle conditions in furnishing prompt and efficient attendance on the wounded.

Capt. T. M. Downs, M.C., USNR, who was expected to speak, was recently transferred from Camp Macdonough.

#### Columbia County

The county society held its semiannual meeting on May 9 at the Columbia Golf and Country Club, with Dr. Cecil Schultz presiding.

Plans were discussed for the formation, under the auspices of the society, of a lay organization for the dissemination of knowledge for the control and cure of cancer. The organization is not yet complete, but will be in the near future. Dr. Caldwell B. Esselstyn is chairman of the committee.

Members of the society witnessed a moving picture, with sound, illustrating the diagnosis and treatment of syphilis. The film, put out by the U.S. Public Health Service, was shown by a representative of the New York State Department of Health.\*

#### Dutchess County

The county society held its May meeting at the Northern Dutchess Health Center on May 3 at 8:30 P.M. The scientific paper was given by Dr. J. Lewis Amster, honorary consulting surgeon at the Morrisania City Hospital, New York. The paper, "Advances in Local and Regional Anesthesia," was supplemented with a motion picture demonstration. Dr. Paul M. Wood, attending physician in anesthesiology, Lincoln Hospital, New York City, opened the discussion.\*

The regular meeting and annual outing of the county society was held June 14 at the Harlem Valley State Hospital, Wingdale.

Colonel Lasher, of the U.S. Military Academy at West Point, was the speaker.\*

#### Erie County

A talk on "Treatment of Acute Hand Infections and Treatment of Burns" was given by Dr. Henry H. Ritter, professor of clinical surgery, New York Post-Graduate Medical School of Columbia University, at a meeting of the Erie County Medical Society on May 24. A question-and-answer period followed the presentation.\*

Dr. Herbert H. Baucus, of Buffalo, President of the Medical Society of the State of New York, was one of the speakers at the Annual Conference of



Health Officers and Public Health Nurses, which was held in Saratoga Springs June 27-28

#### Fulton County

Dr Meyer A Rabinowitz, physician-in-chief at the Brooklyn Jewish Hospital, was guest speaker at a dinner meeting of the county society on May 24 at Nixon's Hotel at Pine Lake. Dr Morris Kennedy, president, presided at the session.

About twenty-five members attended the meet-

gained from years of study and travel in Europe \*

#### Herkimer County

Dr. Leon H. Griggs, dermatologist, of Syracuse, presented an illustrated lecture on common and industrial dermatoses at the regular June meeting of the county society on June 14 at the Mohawk Valley Country Club. A dinner followed the meeting \*

#### Jefferson County

The members of the Jefferson County Medical Society held their annual outing and dinner at the Frontenac Springs Hotel on June 8. The arrangements were in charge of Dr Edwin W. Roberts. There were about 40 physicians and guests present.

During the afternoon a program of sports was enjoyed. A steak dinner was served at 7:00 p.m., after which bridge was played. During the dinner and evening, Miss Rosemary Wolf, pianist, and Miss Viola Leva, accordionist, entertained the guests \*

presented under the auspices of the Saranac Lake Society for the Control of Tuberculosis, headed by Dr. John N. Hayes and Dr. Francis B. Trudeau \*

#### Kings County

at po  
July 1, has been announced by Dr. Jean A. Curran, president of the College.

Retiring after many years of service as professors and executive officers of their respective departments are Dr. Tasker Howard, Professor of Medicine, who joined the faculty of the College in 1910 as an instructor in physical diagnosis, Dr. Edgar D. Congdon, professor since 1932 and executive officer of anatomy, who following service in and Siam, and served as professor of gest current tenure College.

Succeeding these retiring professors as heads of the departments are Dr. William Dock, professor of medicine at the University of Southern California, who will become the College's first full-time professor of medicine in its eighty-three years' history, Dr. Edward Muntwyler, professor of experimental biochemistry at the School of Medicine at Western Reserve University, who will be professor and execu-

tive officer of the Department of Chemistry; and Dr. James B. Hamilton, associate professor of School of and executive

California Dr. Dock, who is a graduate of Rush Medical College in Chicago, was professor of pathology at Cornell University Medical College. From 1926 to 1931 he was on the faculty at Stanford University Medical School, first as an instructor and then as associate professor of medicine, 1929-1936, and as professor of pathology, 1936-1931.

Dr. Hamilton, before going to the University of Missouri School of Medicine, was assistant professor of anatomy at the Yale University School of Medicine.

Dr. Muntwyler first joined the faculty of the School of Medicine of the Western Reserve University in 1927, progressing steadily until becoming professor of experimental biochemistry in 1943.

Another new appointment is that of Dr. Fred L. Moore, who has returned to the staff of the Long Island College of Medicine after two years' absence to us . . . social . . . ment.

Dr. Moore has been director of the Division of Public Health Studies of the Commonwealth Fund for the past two years. He originally joined the staff of the College in 1939 as associate professor of the Department of Preventive Medicine and Community Health and was promoted to the professorship. In his new capacity he will serve also as Medical Director of the Polhemus Clinic of the Long Island College Hospital, in charge of the outpatient department of the hospital.

Other appointments of professorial rank for the year commencing July 1 are: Dr. E. J. Tiffany from assistant professor to associate professor of the department of bacteriology, Dr. F. E. Mallon from instructor to assistant clinical professor in the department of ophthalmology, and Dr. Charles A. Hargitt, Dr. E. Clifford Place, and Dr. Michael Buonaguro, newly appointed to the faculty of the College as assistant clinical professors in the department of ophthalmology, Dr. Emanuel Mendelson, from assistant clinical professor to clinical professor in the department of radiology; and Dr. F. Paul Ansbro, a special lecturer, to assistant clinical professor (anesthesiology) in the department of surgery.

#### Madison County

The JOURNAL is pleased to quote in full the following special bulletin which it received from Headquarters of the European Theater of Operations of the U. S. Army:

"For his excellent work in commanding a company of medical soldiers, Major Charles E. Tegtmeyer, of Hamilton, was recently awarded the Legion of Merit in England. Last July, as a captain in the Medical Corps, he was awarded the Silver Star for exceptional bravery in action.

"The Legion of Merit was won for his work in . . . The citation states, . . . of the North African . . . conceived and de- . . . for the transmittal of vital medical supplies from ship to shore, which has been accepted as standard equipment."

"Major Tegtmeyer has served beyond the capacity of an administering physician. During the early stages of the North African campaign, he reorganized a defunct French hospital. During a battle in Algeria he organized an ambulance service of captured vehicles. Where the Engineers were not available he supervised the building of a road across a river which provided the only means of withdrawal to one of the combat teams.

"The citation states, in closing, 'Major Tegtmeyer was a great inspiration and benefit to all his associates and contributed materially to the combat success of his organization.'"

#### Monroe County

Honors were won by four physicians and one layman at the annual meeting of the Rochester Academy of Medicine on May 2, at which Dr. John J. Finigan was elected president.

Dr. Charles B. F. Gibbs, retiring head of the Academy, presented the Paine Drug Company prize of \$100 to Dr. John H. Remington, who read his prize paper on "Amino Acid Alimentation." Dr. Remington, formerly a member of the pathologic department at the School of Medicine and Dentistry of the University of Rochester, is now on fellowship at the Mayo Clinic in Rochester, Minnesota.

Dr. Benedict Favata, assistant resident in surgery at Strong Memorial Hospital, won the Taylor Instrument Company's annual award of \$100 for his paper on "Fixation of Skin Grafts by Thrombin-Plasma Adhesion."

The Albert David Kaiser medal for 1944 was presented to Dr. James Knight Quigley for his work as head of a committee credited with influencing the decline in maternal mortality in the State.

Dr. William W. Percy, executive director of the Academy of Medicine, was given a citation for his work in that capacity in the last seven years.

Only layman to receive a citation, Al Sigl, Rochester *Times-Union* newscaster, was honored for his efforts in organizing and supervising the Legion of Blood Donors. The Legion now has a membership of 600 and more than 5,000 blood donations have been given in the past seven years. Award winners were presented to Dr. Gibbs by Dr. Shirley R. Snow, Jr.

Officers named at the meeting are: vice-president, Dr. Harold H. Baker; secretary, Dr. John L. Mercer; treasurer, Dr. George H. Gage; and assistant treasurer, Dr. Lyman C. Boynton. Elected trustees for three years were Drs. George E. Sanders, W. J. Merle Scott, and Shirley R. Snow, Jr.\*

Child health is the theme of a series of radio broadcasts which began over WHAM July 1 under the auspices of the county society.

Dr. Morris Fishbein, editor of the *J.A.M.A.*, opened the series with a discussion on "The Child as Key to Destiny and Future of America." Remaining lectures in the series will include:

Dr. John Aikman, Rochester, July 15, "Accident Prevention."

Dr. Paul A. Lembcke, Rochester, July 22, "The Child Hygiene Program of the New York State Department of Health, including E.M.I.C. Service."

Dr. Exie E. Welsch, Rochester, August 5, "Mental Health of Child" (dramatic presentation).

Dr. William L. Bradford, Rochester, August 12,

"Important Diseases Prevalent in Summer to Which Children Are Especially Susceptible—Poliomyelitis."

Dr. Jerome Glaser, Rochester, August 19, "Forms of Allergy in Children and Infants."

Dr. John Merrell Parker, Rochester, August 26, "Modern Aspects of Nutrition of Infant and Child."

#### Nassau County

Dr. Louis H. Bauer, of Rockville Centre, was elected to a five-year term as a member of the board of trustees of the American Medical Association at the final meeting of the House of Delegates at the annual session of the Association in Chicago.

Dr. Bauer succeeds Dr. Roger I. Lee, of Boston, who was made president-elect of the association.\*

#### New York County

Neuropsychiatric breakdowns among U.S. Army Air Force fliers are "the exception and not the rule," Col. Walter S. Jensen, deputy air surgeon, told a meeting of the county society on May 22 at the New York Academy of Medicine.

Colonel Jensen said Americans—"the most psychology-conscious people on earth"—tended to overemphasize and "view with alarm the incidence of neuropsychiatric casualties in this war."

Actually, he said, army fliers have shown a surprising resistance to breakdowns. "In addition, laymen should recognize that the mentality of a peace-loving democracy has not been conditioned for war and, naturally, our boys will feel the impact of discipline, fear, and fatigue" more than if they had been cast in an Axis mold.

Colonel Jensen pointed to the tremendous complexity of flying a 30-ton B-17, in which 130 gadgets must be operated by men in a five-foot cube, burdened down with equipment in below-zero temperature—at the same time fighting off enemy planes and dodging flak.\*

The New York Society for Clinical Ophthalmology has elected the following officers for the year 1944-1945: president, Milton Berliner; vice-president, Lt. Comdr. Benjamin Friedman; recording Secretary, Leon Ehrlich; corresponding secretary, Benjamin Esterman; treasurer, Daniel Kravitz.

The Committee on Medical Education of the New York Academy of Medicine announces that a fellowship in research provided by Dr. Charles Mayer of New York City has been awarded to Dr. Philip Handler of Duke University.

At the thirty-eighth annual meeting of the Women's Medical Society of New York State, the following officers were elected for the year 1944-1945: president, Theresa Scanlan, Manhattan; vice-presidents, Mary E. Potter, Brooklyn, Helen Walker, Buffalo, and Sophy Page Carlucci, Endicott; treasurer, Isabel Scharnagel, Manhattan; secretary, Mary A. Jennings, Manhattan.

Members of the county society who desire copies of the 1944 edition of the *Directory of Tuberculosis*

Clinics may obtain them, without cost, from the offices of the New York Tuberculosis and Health Association, 386 Fourth Avenue, New York City.

Those members of the county society who, because of age or physical incapacity, are confined to the home front, are deeply concerned over the professional future of their colleagues in the armed forces. Inevitably they have benefited financially by their exemption from military service and they desire to contribute some part of the increment to the re-establishment of those who have left homes, loved ones, and practice in the cause of country.

After exhaustive studies to determine how this may best be accomplished, the Trustees of the Physicians Loan and Relief Fund of the Medical Society of the County of New York, under the able leadership of Dr. Nathan Ratnof, have formed a Medical Veterans' Aid Fund. From this loans will be made without interest to enable returning members in need of economic assistance to re-establish themselves in practice, train for a specialty, or undergo suitable rehabilitation in the event of disability.

Every physician who is sensible of the great role  
are  
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At present this fund is a splendid ideal. With your help it will become an even more splendid fact, enabling those of us who have enjoyed the comfort and security of home throughout a great world conflict to pay some small measure of our debt to colleagues whose patriotic selflessness has helped to purchase our safety.

Send in your contribution today to Medical Veterans' Aid Fund, c/o Trustees of the Physicians Loan and Relief Fund, Medical Society of the County of New York, 2 East 103rd Street, New York 29, New York.—J. Med. Soc. Co. N. Y.

James E. Bryan, of White Plains, executive secretary of the Westchester County Medical Society, executive secretary of the County of New York. He was elected to the office of executive secretary on September 1, 1943.

Mr. Bryan has been associated with the Westchester Society since February, 1933. Previously he was lay manager of the American Institute of Homeopathy, a national medical organization with headquarters in New York. During Mr. Bryan's association with the society, the membership has increased from 100 to more than 300.

Mr. Bryan has been active in many health and welfare activities in Westchester. He has been a member of the board of directors of the Westchester Tuberculosis and Public Health Association for the past ten years and served as its president in 1940 and 1941.

During the war period he has served as deputy director of the Emergency Medical Service in the Westchester Office of Civilian Protection, and has represented the medical society on the Division of Civilian War Services of the Westchester War Council. Mr. Bryan is also secretary of the Medical

Care Subcommittee of the Disaster Relief Committee of the Westchester Red Cross Chapter, and a member of Red Cross committees on nurse procurement, nurses' aides, home nursing, and blood donor services. He is also a member of the Health Administration Committee, the Cancer Committee, and the War Relocation Authority.

Comm. Lionel Auster has just returned to the United States after a tour of duty of almost two years in the South Pacific, where he was chief of surgery at one of the Navy's major base hospitals which officiated during most of the early Solomon Islands campaign.

A report of the surgical activities of his unit is given in the May number of the *United States Naval Medical Bulletin*, entitled "Combat Injuries in the South Pacific." His report of the syndrome of underweight, "Hydraulic Abdomen," appeared in the *Journal of the American Medical Association* in March, 1943. He is now on duty at the U. S. Naval Hospital, San Francisco.

### Oneida County

Thirty-one physicians from Utica and vicinity are now serving as advisors for draft registration at the County of Medicine.

Dr. J. J. La Manna, head of the armed forces mobile examination and induction team. Dr. H. D. MacFarland is chairman of the war-participating committee of the Oneida County Medical Society.

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Baum, William H. Beattie, E. N. Bink, Neil D. Black, Loftus L. Bryan, Francis T. Chase, O. R. Cupolo, Edward D. Dake, John J. Dorey, Walter F. Duggan, Vaughn W. Dutton, William B. Falvo, James E. Gage, Ross D. Helmer, Clifford E. Howard, John A. Howard, Leon P. Jankiewicz, Myles W. Johns, Mortimer H. Lewis, Robert J. MacCallum, H. D. MacFarland, Oswald J. McKendree, Ward Millias, Arthur W. Pense, Daniel E. Pugh, Harry T. Remmer, Emerson W. Rude, William A. Ryan, Donald K. Schwartz, George L. Warner, and William W. Wright.\*

### Ontario County

Dr. J. J. La Manna resumed the practice of medicine after an honorable medical discharge from the Medical Corps, having served with the 1st Station Hospital for eighteen months.

Dr. Gustav F. ... Medical Society ... ing, June 16. ... also was the re ... cocci Infections\*\*

### Orange County

The new officers of the Medical Society of the County of Orange are: president, Walter I. Neller, of Middletown; vice-president, George E. Kenny, of Port Jervis; secretary-treasurer, Earl C. Waterbury, of Newburgh; censors, Hugh M. Brewster, of Port Jervis; Homer L. Stephens, of Walden; William J. Hicks, of Middletown; and Charles W. Layne, of Newburgh.

Delegates to the State Society are T. W. Neumann, 1943-1944, of Central Valley; M. A. Stivers, 1944-1945, of Middletown. Alternates are C. B. Reed, 1943-1944, of Newburgh; and H. F. Morrison, 1944-1945, of Tuxedo.

Delegates to the First District Branch are G. R. Dempsey, of Cornwall-on-Hudson; and H. L. Stephens, of Walden.

The committees are: Public Relations, H. F. Pohlmann, *chairman*, R. L. Schmitt, T. W. Neumann, S. W. Mills, and W. E. Kelly; Public Health, N. P. Cosco, *chairman*, J. W. Walton, D. R. Gordon, F. M. Bullard, and R. F. Crabtree; Economics, H. F. Morrison, *chairman*, H. F. Mars, W. J. Hicks, C. W. Layne, H. L. Stephens, and G. R. Dempsey; War Participation, T. W. Neumann, *chairman*, H. F. Morrison, H. F. Pohlmann, C. B. Reed, M. A. Stivers, and G. E. Kenny.

On May 4 there were 240 members of the county society. Fifty-seven members are in the armed services.

### Queens County

On May 23 Dr. Vincent Mazzola, of Brooklyn, member of the Medical Grievance Committee of the State Board of Regents, outlined medical and legal racket investigations and suggested preventative and curative measures to combat professional racketeering at a meeting of the county medical society and the Queens County Bar Association.

The meeting, which was devoted to the relationship between medicine and law, was attended by 200 doctors and lawyers.

Dr. W. Guernsey Frey, Jr., of Forest Hills, president of the medical society, conducted the meeting and introduced the guest speakers, who also included Frank M. Nicolosi of East Elmhurst, president of the Bar Association, who conducted a discussion on the points outlined by Dr. Mazzola.

Mr. Nicolosi and Dr. Mazzola were guests of the officers of the medical society at a dinner in the Forest Hills Inn preceding the meeting.

A reception, with the medical society auxiliary, followed the medical-legal meeting.

The county society will hold no further meetings until fall.\*

. . .

Dr. Alexander Freed, radiation therapist at Queens General Hospital, has been appointed chairman of the speakers' bureau of the Queens County Cancer Committee. He succeeds the late Dr. John H. Barry.

Dr. Freed was formerly director of the New York City Cancer Institute, and has been engaged in cancer research for sixteen years.

The speakers' bureau is composed of physicians who lecture on cancer and cancer control to organizations requesting such talks.\*

### Rensselaer County

Miss Leah Blaisdell, member of the State Procurement and Assignment Committee for Nurses,

addressed the meeting of the county society at the Health Center in Troy on May 16.

Dr. Stephen H. Curtis reported on the Annual meeting of the State Medical Society in New York, to which he and Dr. Alson J. Hull were delegates from Rensselaer County.

Motion pictures on penicillin were shown. Dr. Richard P. Doody presided.\*

### Rockland County

Dr. Frank F. Tallman, formerly of Orangeburg, who has been Director of Mental Hygiene in the State of Michigan for the past two and one-half years, is resigning to accept the position of Commissioner of Mental Diseases in the Ohio State Department of Public Welfare, Columbus.

There are fifteen hospitals for the mentally ill, feeble-minded, and epileptic in the Division of Mental Diseases which Dr. Tallman will supervise, with a population of about 27,000 patients. In addition to his work with the hospitals, Dr. Tallman will be responsible for a receiving hospital program and state-wide program of mental hygiene.

### Schenectady County

The regular monthly meeting of the county society was held at the Shaker Ridge Golf Club on June 1. A buffet luncheon, tennis, and golf were enjoyed during the afternoon, followed by a business meeting at 5:30 p.m. After a cocktail hour at 6:30 p.m. and dinner at 7:00 p.m., Capt. Bob Bartlett spoke on arctic exploration and showed colored movies.

### Steuben County

The summer meeting of the county society was held at the Veterans Facility in Bath on June 8. Luncheon at 12:45 p.m. was followed by a business meeting at 1:30 p.m. The nursing situation in Steuben County was discussed by a representative of the Procurement and Assignment Committee for Nurses. After the business meeting the staff of the Veterans Facility presented the scientific program.

### Warren County

The new drug, penicillin, has remarkable results in certain types of infections, Lt. Comdr. R. C. Arnold reported at a dinner meeting of the Warren County Medical Society on June 15 at the Glens Falls Country Club.

Lt. Comdr. Arnold, of the United States Public Health Service, who has been doing research work on penicillin at the Marine Hospital, Staten Island, presented a detailed review of the uses and therapeutic results of the drug. He illustrated his talk with a series of slides and charts.

The drug is now available to doctors for use in certain approved types of infections and is allotted through depots. The Albany Hospital is the depot for this area.

The meeting was well attended by doctors from Warren County and many from Washington and Saratoga counties. Dr. Burke Diefendorf, president of the Warren County Medical Society, presided and introduced the speaker. Following the program a general discussion was held.

### Westchester County

Dr. Richard Charlton, of Bronxville, received the James Ewing Award of the Westchester Medical Society "as a token of recognition and commendation for distinguished service to the people and the medical profession of Westchester, contributing to

[Continued on page 1592]

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*trate, yeast extract—to supply in Natural form the complete B complex.*

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**IVC. ELIXIR BEPADIN**

[Continued from page 1590]

the understanding and control of malignant disease."

The award of the society's only scientific honor was made at a meeting in New York Hospital, Westchester Division, on May 16.

. . .

Dr. Vincent J. Maida, who began service in the Army as a first lieutenant in October, 1942, has received a medical discharge and has resumed the practice of medicine in Mount Vernon.\*

. . .

Several Westchester County newspapers recently carried the following editorial:

"During his term of service as Executive Secretary of the Westchester County Medical Society, James E. Bryan has brought to that organization the ability of one trained in organization and particularly in the fine art of making tech-

nical and professional problems of interest to the general public. Thus, during his twelve years of labor in the Westchester vineyards he has established a remarkably fine contact between the profession he represents and the public which they serve.

"Within the Society itself his efforts were largely responsible for increase of membership from 480 to 850 and the Society, despite absence of some 300 members in military service, is today in excellent condition. The standard of ethical conduct has been maintained, an unusually interesting *Westchester Medical Bulletin* has been issued monthly under Mr. Bryan's editorship, and there has been a growing understanding of the essential relationship which must exist between physician and patient in these trying days of shortage of medical and nursing personnel.

"Now that Mr. Bryan resigns to accept a similar post of larger scope with the Medical Society of the County of New York, it is both pertinent and timely to mention that his services will be sorely missed in Westchester. We trust the Society will be able to obtain as a successor one equally energetic and able, although we realize such an executive will not be easy to find. And with Mr. Bryan, as he leaves this Fall for his new duties, will go appreciation from both the medical profession and the public of Westchester for a difficult task well performed."

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Irving S. Barcham	34	N.Y. Univ.	May 28	Manhattan
Robert Benda	53	Prague	March 26	Manhattan
Charles H. Brush	55	Fordham	May 29	Kings Park
William L. Clark	80	Vermont	June 16	Hoosick
Francis W. Davis	83	N. Y. Univ.	June 12	Manhattan
Willard F. Doolittle	72	P. & S., N.Y.	June 5	Manhattan
Ray M. Eaton	58	Albany	May 19	Rochester
Ralph Farmer	45	Berlin	February 21	Maspeth
Isadore Flatto	65	P. & S., N. Y.	March 15	Manhattan
Carl A. Huber	72	P. & S., N.Y.	May 31	Rochester
William J. McKown	72	Albany	May 28	Albany
John B. Meury	71	L.I.C. Hosp.	May 13	Brooklyn
Carolyn L. Olendorf	69	W.M.C. Pa.	May 28	Cobleskill
Frank Petrolo	59	Ecl., Cincinnati	February 11	Woodside
Daniel R. Robert	59	P. & S., N.Y.	June 21	New Lebanon
				Center
William F. Saybolt	65	Pennsylvania	June 20	Forest Hills
Henry J. Spencer	60	P. & S., N.Y.	June 11	Manhattan
William H. Steers	74	Bellevue	May 31	Brooklyn
Frank L. Tucker	77	P. & S., N.Y.	May 28	Brooklyn
August E. Witzel	53	Syracuse	May 15	Newark
Lyle L. Wyse	38	Toronto	May 21	Lackawanna

### DIRECTORY OF MEDICAL SPECIALISTS WILL HAVE NEW EDITION

The third edition of the *Directory of Medical Specialists*, listing names and biographic data of all men certified by the fifteen American boards, is to be published early in 1945. Collection of biographical data of the diplomates certified since the 1942 edition and revision of the older listings are now going forward rapidly. Diplomates are requested to make prompt return of notices regarding their

biographies as soon as possible after receiving the proper forms from the publication office soon to be mailed to them. The directory is published under the direction of the Advisory Board for Medical Specialties by the A. N. Marquis Company, 919 North Michigan Avenue, Chicago 11. Dr. Paul Titus, 1015 Highland Building, Pittsburgh 6, is the directing editor.—*J.A.M.A., June 3, 1944*

# DID WARTIME PRACTICE FIND YOU INADEQUATELY EQUIPPED?

Medical practice on our home front has demonstrated a lot of things the past two years—notably, the indomitable will to-do and the self-imposed personal sacrifices of physician while bearing their share of the greatly increased load.

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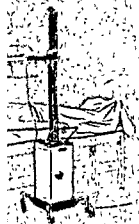
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# Hospital News

## Hospital Association Names New Council Secretaries

THE American Hospital Association announces the appointment of two new Council secretaries.

Dr. Hugo V. Hullerman will be secretary of the Council on Professional Practice, which coordinates matters of a professional nature in hospitals. Its scope covers affairs dealing with medical service, nursing, dietetics, social service, x-ray, physical therapy, and related subjects.

Until his resignation to assume his new duties with the American Hospital Association, Dr. Hullerman was chief of the division of maternal and child hygiene of the Illinois Department of Health at Springfield. A graduate of the University of Minne-

sota Medical School, Dr. Hullerman received a master of science degree in public health at the University of Michigan in 1938.

Hazen Dick is the newly appointed secretary of the Association's Council on Administrative Practice. This council correlates for association members information of such general administrative fields as hospital economics, admission and collection procedure, personnel relations, accounting, and similar management responsibilities. Mr. Dick has been administrator of both the Louisville, Kentucky, General Hospital and Waverly Hills Sanatorium in Kentucky.

## Henry Street Nurse Service Appoints Director

APPOINTMENT of Miss Marian G. Randall, nationally known leader in the field of public health nursing, as director of the Henry Street Visiting Nurse Service of New York, effective June 1, has been announced by the board of directors of that organization. Miss Elisabeth C. Phillips, acting director, will resume her former position as assistant director.

Miss Randall served as assistant director of the Henry Street Visiting Nurse Service, in charge of records and statistics, from 1938 to 1941, when she left to take a wartime position as principal nursing consultant in the U.S. Public Health Service, assigned to the Medical Division of the U.S. Office of Civilian Defense, Washington, D.C. Since completion of this assignment, she has been making a study of prepayment plans for nursing service for the Associated Hospital Service of New York.

In addition to practical experience as a public health nurse in both official and private agencies, Miss Randall has written extensively for various professional journals. From 1930 to 1937, she was a member of the research staff of the Milbank Memorial Fund, for which she conducted a series of administrative studies in public health nursing (rural and urban). She is author of a book, *Personnel Practice in Public Health Nursing in Official Agencies*, published by the Macmillan Company, based on data collected on her visits to city and state health departments in all sections of the United States under auspices of the National Organization for Public Health Nursing.

Miss Randall was graduated from the Samaritan Hospital School of Nursing in Troy, New York. She received her B.S. degree and a certificate in supervision and administration in public health nursing from Teachers College, Columbia University, where she subsequently served as special instructor.

## Army Nurse Corps Strength to Be 50,000

THE authorized strength of the Army Nurse Corps has been established at 50,000, according to an announcement of the War Department reported in the May, 1944, issue of *Public Health Nursing* and in the June, 1944, *American Journal of Nursing*.

This is a ceiling. Actual appointment of nurses will be determined by the needs of the Army in relation to casualties, and by the rate at which civilian nurses are declared available by the Pro-

curement and Assignment Service of the War Manpower Commission.

"The needs of the Medical Department fluctuate with the needs of the Army," Major General Norman Kirk, Surgeon General, U.S. Army, has stated. "The needs of the Army depend on the number of casualties and the number of casualties cannot be known until we have met the enemy for the last time."

[Continued on page 1596]



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[Continued from page 1594]

### Improvements

The "Société des 40 Hommes et 8 Chevaux" of Voiture 463 has presented an oxygen therapy unit to the Champlain Valley Hospital in Plattsburg for use in medical cases involving the respiratory system.

The presentation was made to Rev. Sister Mary Patricia, R.N., superintendent of the Hospital, on behalf of the Society of "40 and 8" by Chef de Gard Harry Neverett, past Chef de Gard Jack Goetz, and Voyageur L. H. Coulbron.\*

As the first step toward a contemplated expenditure of \$2,000 by Syracuse Post 41, American Legion, to equip a children's heart clinic in Memorial Hospital in Syracuse on May 15, Dr. Patrick H. O'Hara, commander of the post, presented a check for \$823.38 for x-ray equipment to Dr. J. G. F. Hiss, who is organizing the clinic.

Formation of the clinic will be part of a four-county campaign against rheumatic fever and heart disease sponsored by the State Department of Health and the State Medical Society. The campaign covers Onondaga, Cortland, Cayuga, and Oswego counties.

The clinic will also serve as a demonstration center, Dr. Hiss said.

Members of the University of Syracuse College of Medicine on the committee for the clinic, besides Dr. Hiss, include Dr. Brewster C. Doust and Dr. O. W. H. Mitchell.\*

Several pieces of new equipment for the Brooks Hospital in Dunkirk have arrived there and are ready for use. The instruments are gifts of the women's auxiliary of the hospital.

The equipment includes an otoscope, an ophthalmoscope, two Burdick bakers, and a Padgett dermatome.\*

Work on the new \$336,000 maternity addition to Mercy Hospital, Hempstead, was started on June 8 following ground-breaking ceremonies on the site the day before. The project will be completed before winter, it is expected.

Representatives of the church, the hospital, and various governmental agencies took part in the ceremonies that marked the start of the wartime construction job that will be done with the aid of the Federal Works Agency.\*

### At the Helm

G. Beekman Hoppin, of Syosset, was re-elected for his seventh term as president of the Nassau Hospital Association at its meeting in Mineola on May 23.

Miss Mildred Constantine, superintendent of the Amsterdam City Hospital, was elected president of the Northeastern Hospital Association at the annual meeting held on June 1 in Albany. Other officers chosen were Mrs. Helen Warren, Samaritan Hospital, Troy, vice-president, and Miss Gertrude Duncan, Ellis Hospital, Schenectady, Secretary-treasurer.

Dr. Frederick McCurdy, head of the State Department of Hospitals for the Mentally Ill, was the guest speaker at luncheon.\*

At the annual meeting of the staff of the Eastern Long Island Hospital Dr. J. Mott Heath, of Greenport, was elected chief of staff. Dr. Donald Currie, of Shelter Island, was elected secretary and head of the x-ray department of the hospital. Dr. Hans Joergensen, Dr. George Bergmann, and Dr. Heath were elected as members of the executive committee.\*

Dr. Roswell D. Johnson has arrived in Coopers-town, to begin his duties at Bassett Hospital, where he will be associated with Dr. Marjorie F. Murray in pediatrics and will direct special work in hematology.

Dr. Johnson graduated from the University of Iowa in 1938, interned in medicine at the Henry

Ford Hospital, Detroit, and in pediatrics at Yale University School of Medicine, New Haven, Connecticut. He served as assistant resident at Strong Memorial Hospital, Rochester, and as resident in New Haven Hospital children's clinic, where he had been on the full-time staff for two years.\*

S. Chester Fazio, superintendent of the Easton, Pennsylvania, Hospital for the last four and a half years, has been appointed superintendent of St. John's Riverside Hospital in Yonkers.

Mr. Fazio succeeds Captain Harry H. Warfield who died February 5.

Mr. Fazio served as a hospital superintendent in the U.S. Army in World War I and was associated with the Beekman Hospital in New York City and the Brooklyn Hospital before becoming superintendent of the Rockaway Beach Hospital in 1923, a post he held for seventeen years.\*

The board of directors of the Caledonian Hospital in Brooklyn has presented to the hospital a portrait of the institution's superintendent, Nora E. Young.

Miss Young has been superintendent since 1918, two years after the institution was granted its charter. She has seen it grow from a small twenty-bed hospital to the present modern one hundred and thirty-bed building.

Presentation of the portrait, which will hang in the hospital board room, was made by Supreme Court Justice Lewis L. Fawcett and was accepted by Donald G. C. Sinclair, president of the hospital. It was painted by Jean Spencer.\*

\* Asterisk indicates that item is from a local newspaper.

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[Continued from page 1596]

Dr. B. C. Tillotson, of Fort Edward, was elected president of the Glens Falls Hospital staff at its annual meeting. He succeeds Dr. John H. Sheldon and has been acting president since the former enlisted in the Navy last winter.

Dr. Edward J. Fitzgerald was elected vice-president, and Dr. W. W. Bowen was re-elected secretary-treasurer.\*

. . .

Dr. George F. Etling assumed his duties on May 15 as assistant director of the Rome State School, succeeding the late Dr. Maxwell C. Montgomery.\*

. . .

Recommendations of the Flushing Hospital medical board that 182 doctors be appointed to the hospital's consulting staff for the ensuing year were approved in May by the board of trustees.

Seventy-three of the doctors are serving with the armed forces and their posts are being held for them for the duration.

In addition, a courtesy staff of eighty-one physicians, twenty-six of whom are in the armed forces, was also named.

Heads of the various departments were re-appointed. They include Dr. J. S. Thomas, director of surgery; Dr. G. J. Lawrence, director of gynecology and obstetrics; Dr. Johnston MacLeod, director of medicine; Dr. W. C. A. Steffen, director of the dental department.

Dr. C. H. Ellard was named chief of the outpatient clinic in surgery; Dr. D. J. Swan, chief of the outpatient clinic in medical treatment; Dr. S. L. Mitchell, chief of the outpatient clinic in

gynecology and obstetrics; Dr. Emanuel Fletcher and Dr. Benjamin Goldsmith, chiefs of the outpatient clinic in pediatrics; Dr. E. A. Goode, chief of the outpatient clinic in otolaryngology; Dr. K. H. Houck, chief of the neurology clinic; and Dr. Thomas D'Angelo, chief of the outpatient clinic in ophthalmology.

Other appointments include:

Dr. Frederick Courten, Dr. J. C. McCauley, Jr., orthopaedists; Dr. Cameron Duncan, Dr. Charles A. Gordon, obstetricians; Dr. Charles H. Smith, pediatrician; Dr. Arthur S. Wilson, rhinologist and laryngologist; Dr. A. B. Reese, ophthalmologist; Dr. H. M. Imboden and Dr. F. M. Law, roentgenologists; Dr. F. N. Dealy, Dr. Donald Gordon, Dr. B. G. Story, and Dr. J. N. Wickham, surgeons.

Dr. A. S. W. Touroff, thoracic surgeon; Dr. H. Easton McMahon, cardiologist; Dr. James G. Dwyer, Dr. Isodore Friesner, otologists; Dr. James L. Joughin, neurologist; Dr. Thomas H. Cherry, gynecologist; Dr. J. J. Rothwell, dermatologist; Dr. Oswald Lowsley, Dr. Fedor Senger, Dr. J. H. Morton, genitourinary surgeons; Dr. Arthur S. Wilson, bronchoscopist; Dr. Fred W. Steward, pathologist; Dr. Lewis D. Stevenson, neuropathologist; Dr. Horace King, Dr. Herbert D. Ayers, dental surgeons; Dr. Harold S. Vaughn, oral surgeon; Dr. Abraham Braunstein, tuberculosis, and Dr. J. F. Dick and Dr. F. B. Wood, physicians emeritus.

Dr. Leonard Goldman, radium therapist; Dr. Ralph Herendeen, roentgenologist; Dr. Evelyn Apogi, director of anesthesia; Dr. Jacob Werne, pathologist; Dr. K. H. Houck, attending neurologist; Dr. J. H. Siris, neurosurgeon; Dr. C. N. Baker, director of the dispensary, and Dr. A. E. Donnelly and Dr. Charles Miller, attending dermatologists.\*

## Newsy Notes

The Bronx Area Station Hospital, formerly Lebanon Hospital, was dedicated by the Army on June 7. The hospital was taken over in July last year and is being used to care for transient Army personnel.\*

. . .

The late Norman L. Noteman, of New Rochelle, in his will, set up a fund for the use of New Rochelle Hospital to be known as "the Noteman Memorial Fund."\*

. . .

On June 5, Maj. Gen. T. A. Terry, commanding general of the Second Service Command, dedicated the Staten Island Area Station Hospital, an Army Service Force installation, at New Dorp Beach, Staten Island.

Col. Ralph Cudlipp, commanding medical officer of the post, presided over the ceremonies, which were attended by four hundred persons, including members of the Red Cross, Wacs, and enlisted men.

The hospital, which has been operating for several months, provides medical and surgical treatment for sick and injured soldiers from units in the metropolitan area. If called upon, General Terry said, it could take care of overseas casualties.

After the dedication, at which Borough President Joseph A. Palma and Dr. Edward Bernecker, Com-

missioner of Hospitals, also spoke, General Terry and his guests toured the twenty buildings that make up the hospital.\*

. . .

Forty-four women volunteers who will serve in hospital libraries here by delivering books to patients received certificates of graduation on June 7 from a training course given by the hospital library bureau of the United Hospital Fund of New York. Roy E. Larsen, president of the fund, presented the certificates.

Two hundred volunteers are needed immediately for the summer months, according to Mrs. Louise Heinze, director of the bureau. Women who can give one full day or two half days a week are urged to register at the fund's office. After training on the job they will be enrolled in the regular course in October.

The bureau's training course is given three times a year. Three hundred and fifty women have completed it and are serving in patients' libraries in fifty-nine city and voluntary hospitals affiliated with the fund.

A hospital library volunteer visits each patient twice a week, wheeling a book cart loaded with novels, current fiction, and nonfiction, and magazines for men and women. On an average day a volunteer gives out books to about sixty patients.

[Continued on page 1600]

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[Continued from page 1598]

Some of the women trained in the course serve as Red Cross Gray Ladies in government hospitals. The majority, however, have qualified only for work in civilian hospitals. Organizations cooperating with the bureau include the American Red Cross, the American Women's Voluntary Services, the Civilian Defense Volunteer Office, the city's Department of Hospitals, and the New York Public Library.\*

A reception and tea held in the Nurses' Residence on May 16 marked the one hundred and seventy-third anniversary of New York Hospital. The celebration also marked the granting of a charter to the institution by King George III in 1771.\*

Initial subscriptions of \$17,700 by nine donors to establish the second floor in the new wing of Northern Westchester Hospital as a memorial to the late Horace Eddy Robinson, of Pleasantville, and one of \$25,000 toward the establishment of the third floor wing as a memorial to Dr. Charles F. Chapman of Mount Kisco, have been announced by F. Wilder Bellamy, chairman of the special gifts committee in the hospital's \$500,000 building fund program.\*

The annual awards of the United Hospital Fund of New York were presented at Carnegie Hall on

May 18 to 2,200 men and women who have served as volunteers in Manhattan and Bronx hospitals during the last year. Enamel pins were presented to those who served more than the minimum requirement of 150 hours, and gold bars were given to others who have totaled 500 hours since the volunteer system was instituted May 1, 1940.\*

The Women's Organization for the American Merchant Marine recently presented a check for \$1,000 to Howard S. Cullman, president of the hospital, for the re-endowment of two beds for one year. This was the third time the organization had made such an endowment.

The club's beds will bear a small plaque honoring the donors and will be devoted to wounded and sick American merchant seamen who are referred to the hospital by the Seamen's Church Institute of New York. The Beekman institution, because of its proximity to the East River piers, has treated hundreds of such seamen.\*

The Associated Hospital Service of New York now issues group contracts providing care in hospital wards at a cost of 56 cents a month for individuals and \$1.32 a month for an entire family. The new plan, which is sold only on a payroll deduction basis, is designed for persons of low income who cannot afford the service's regular Blue Cross Plan, providing hospital care in semiprivate rooms.

#### KENTUCKY WOMAN GETS DANA MEDAL

The Leslie Dana Gold Medal, awarded annually for outstanding achievements in the prevention of blindness and the conservation of vision, will be presented this year to Miss Linda Neville of Lexington, Kentucky, it is announced by the National Society for the Prevention of Blindness.

Miss Neville is the founder of the Kentucky Society for the Prevention of Blindness, which is virtually a one-woman organization, and she is known in her home state as "the angel of Kentucky."

During the past 40 years, she has utilized her Bryn Mawr education, taken advantage of her social connections, and spent practically her entire inheritance in order to bring sight to hundreds of babies, young children, and adults from the poverty-stricken mountain districts of Kentucky, who needed medical care or eye surgery.

Miss Neville, who is now 70 years old, was born in the same house which has served as the head-

quarters for her prevention-of-blindness activities. At least 1,000 persons have received skilled medical care and have been saved from the doom of darkness through her intercession.

Selection of the recipient of the Leslie Dana Gold Medal is made by the St. Louis Society for the Blind, through which the medal is offered by Mr. Leslie Dana of St. Louis. This highly prized token of recognition in the field of public health is given upon the recommendation of the Association for Research in Ophthalmology.

The conditions of the Leslie Dana Medal award set forth that it is to be made for "long meritorious service in the conservation of vision in the prevention and cure of diseases dangerous to eyesight; research and instruction in ophthalmology and allied subjects; social service for the control of eye diseases; and special discoveries in the domain of general science or medicine of exceptional importance in conservation of vision."

#### AMERICAN BOARD OF OPHTHALMOLOGY ANNOUNCES 1945 EXAMINATIONS

The American Board of Ophthalmology has announced the approximate dates for its 1945 examinations.

In Los Angeles the examination will be held during the Midwinter Course if the number of applications warrant it. The dead line for applications is October 1, 1944. The examinations in New York City will be held in June, the exact date to be an-

nounced later. The dead line for applications is December 1, 1944. The date of the examinations in Chicago has not been set; the dead line for applications is April 1, 1945.

All examination dates are contingent on war and transportation conditions. Application blanks can be obtained from the American Board of Ophthalmology, Cape Cottage, Maine.

R

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# Health News

## Public Health Officials Hold Conference

The Annual Conference of Health Officers and Public Health Nurses was held June 27 and 28 at the Grand Union Hotel, Saratoga Springs.

The opening address was given by Dr. Edward S. Godfrey, Jr., State Commissioner of Health, followed by a talk on health in England by Arthur Massey, M.D., medical officer of health, Coventry, England.

"The Role of the Practicing Physician in the Improvement of Medical Care in the State of New York" was the subject of an address by Herbert H. Bauckus, M.D., President of the Medical Society of the State of New York.

Maj. John H. Dingle, M.D., commissioner on acute respiratory diseases, Station Hospital No. 2, Fort Bragg, N.C., opened the afternoon session with a discussion on "Atypical Pneumonia," followed by talks by William T. Wells, associate professor of research in air-borne infections, University of Pennsylvania, and Dr. R. E. Dyer, director, National Institute of Health, Bethesda, Maryland.

The Wednesday morning session was opened by Dr. Foster Kennedy, professor of neurology, Cornell University Medical College, who spoke on "Nervous Conditions Associated with Warfare," followed by Dr. Martha M. Eliot, associate chief, Children's Bureau, United States Department of Labor, Washington, D.C. The title of Dr. Eliot's address was "Problems of Infant Mortality."

Recent introduction of rapid treatments for early syphilis marks a major step forward in the fight against the disease, Dr. George W. Baehr, member of the New York City Health Council, said in an address before the group.

Declaring that thousands of syphilis patients have been treated in hospitals in all parts of the country, Dr. Baehr said "slavish adherence" to the slower methods of therapy has been largely responsible for failure to eradicate the disease.

"With the introduction of penicillin, the picture has changed," he stated. "Eighty to 90 per cent of all patients with early syphilis can be rendered non-infectious and perhaps cured within a week. Sufficient time has not elapsed to speak positively of a cure, but the results are most encouraging."

Dr. Foster Kennedy told delegates that "perhaps the most important weapon against nervous breakdown in war is a sense of unity with your immediate group." Dr. Kennedy said "the herd instinct has been described as important in helping each individual to do his task," and added:

"We know from this war that each man's social reputation is important to himself . . . . In Britain it has never been 'good form' to show over-much emotion; this is a precious asset when bombs are falling. Of course, each man is afraid, but, if he is never allowed to show fear and if he shows little fear to others, panic is not spread. Discipline, to be perfect, must be within—only in lesser terms from without."

## Use of Penicillin in Early Syphilis

Large-scale use of penicillin in the treatment of early syphilis is being undertaken by the U.S. Public Health Service, the Federal Security Agency, and a number of State health departments, Medical

Director J. R. Heller, Jr., chief of the P.H.S. Venereal Disease Division, announced on June 15. Selected patients with early syphilis will receive penicillin in rapid-treatment centers, of which there are more than fifty in the United States. Thirty-six centers in eighteen States are already participating in the penicillin program.

The rapid treatment centers are special hospitals that have been established within the last two years as part of the national venereal disease control program. To date approximately 20,000 patients have been admitted to the centers and have been treated for syphilis and gonorrhea with new intensive methods. Penicillin already has been used successfully at the rapid-treatment centers for treating gonorrhea cases that did not respond to sulfa drugs. Studies of the effectiveness of penicillin in the treatment of syphilis will be conducted by the Public Health Service in cooperation with the National Research Council.

"This program of penicillin therapy for syphilis is a research as well as a treatment program," Dr. Heller said. "The effectiveness of penicillin in the treatment of syphilis has not been fully evaluated. However, evidence of its possibilities, following the original treatment of syphilis patients by Public Health Service physicians at Staten Island in 1943, is sufficient to warrant its large-scale use in the interest of public health. If these studies prove that penicillin is as effective as everyone hopes, we will be armed with a powerful new weapon in the national fight against syphilis. It is of interest that about one-third of all the syphilis patients admitted to rapid-treatment centers are infected also with gonorrhea. Penicillin has already proved its value in treating gonorrhea. If it should prove equally as effective in treating syphilis it would be possible, for the first time in medical history, to treat patients with both these venereal diseases with a single drug."

The news that penicillin had been used with preliminary success to treat syphilis was first announced in October, 1943, by Senior Surgeon J. F. Mahoney, U.S. Public Health Service Venereal Disease Research Laboratories, U.S. Marine Hospital, Stapleton, Staten Island, New York. Three of the original patients treated by Dr. Mahoney and his associates have been under observation for nearly a year; to date, they remain free of any symptoms of the disease.

Since Dr. Mahoney began his research, additional studies have been conducted by the Army, the Navy, and the U.S.P.H.S. in collaboration with the Penicillin Panel of the National Research Council. More than 1,000 patients with syphilis in all stages have been treated with penicillin in these studies. The drug has an immediate effect on syphilis of all types, but additional time must pass before permanence of results can be judged, according to Dr. Heller.

Most of the patients selected for penicillin treatment in the P.H.S. program will be persons with early untreated syphilis who can be re-examined regularly for a period of six months or a year. Two schedules of penicillin therapy are being considered in the U.S.P.H.S. program—a four-day schedule and an eight-day schedule.

State rapid-treatment centers to which U.S.P.H.S.

[Continued on page 1604]



# HYPERTENSION CASUALTIES



## ... Cardiac Failure

Essential hypertension regularly results in concentric hypertrophy of the left ventricle. If the hypertension persists, the hypertrophied heart eventually dilates and fails.

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[Continued from page 1602]

physicians have been assigned to supervise the medical program, and which are already participating, include: San Diego, California; Denver and Pueblo, Colorado; Ocala, Wakulla, and Jacksonville, Fla.; Pineville and New Orleans, Louisiana; Ann Arbor, Michigan; Meridian and McLain, Mississippi; Albuquerque, New Mexico; Charlotte, North Carolina; Rush Springs, Oklahoma; Columbia, South Carolina (three centers); Nashville, Chattanooga, and Memphis, Tennessee; San Antonio, El Paso, and Waco, Texas; Richmond, Virginia; Seattle and Grand Mound, Washington; and Washington, D.C.

Federal Rapid Treatment Centers participating include: Birmingham, Alabama; Hot Springs, Arkansas; Pensacola, Florida; Savannah and Augusta, Georgia; Greenwood, Mississippi; St. Louis, Missouri; Durham, North Carolina; Norfolk, Virginia; Charleston, West Virginia.—*Release from the Office of War Information*

## Dental Examinations Begun in Caries-Fluorine Demonstration

As a first step in a long-range demonstration to determine the practicability of mass protection against dental caries by adding fluorine to public drinking water supplies, the New York State Department of Health recently began dental examinations of school children in the city of Newburgh which, with the city of Kingston, is collaborating in the project. These communities were selected as study and control areas, respectively, after careful consideration of many sections of the State which might be suited to such a demonstration.

The examinations in Newburgh are being made by the Department's senior dentist, who plans to make dental inspections of about 1,000 children in various age groups from 5 through 14 years. The purpose is to obtain, at the outset of the demonstration, a dental caries index which will serve as a basis for comparison with the terminal figures at the end of ten years, the length of time which must elapse before the full benefits of the water treatment are realized.

This comparative analysis will make it possible to determine any improvements which may have resulted from fluorination of the water.

It is also planned to make a pediatric investigation of a representative sample of the child population, including a general physical examination, urinalysis, and x-rays of the long bones and centers of ossification.

Procedures for these examinations are now being prepared and when they are completed, a substantial portion of the child population will be examined. All examinations will be made before the fluoride is added to the water supply.—*Health News, June 5, 1944*

## Free Penicillin Treatment of Gonorrhea

Sulfonamide-resistant gonorrheal patients may be referred for treatment with penicillin to the Central Clinic of the Bureau of Social Hygiene, New York City Department of Health, located at 130 Leonard Street, Manhattan. This announcement was made by Dr. Ernest L. Stebbins, New York City Commissioner of Health, on June 17.

Treatment for such patients may be obtained without cost, irrespective of their economic status. This service is available by appointment; telephone WO 2-6900, extension 331.

## New Boric Acid Labeling Regulation Announced by Board of Health

The New York City Board of Health at a meeting held May 31 amended the Sanitary Code sections pertaining to drugs by adding a new section (Section 127), effective June 15, 1944, requiring that labels on boric acid in the form of powder, crystals, or solutions shall contain the warning: "Caution—Not for Internal Use Except as a Mouth Wash, Eye Wash, or Douche."

## Hygiene Association Issues 1943 Report

An all-time high was reached last year in the nation's fight against the venereal diseases, but the attack must be maintained and strengthened, since gonorrhea and syphilis remain this country's most serious wartime health problems.

This information is highlighted by the American Social Hygiene Association in its annual report for 1943, issued by the Association's executive director, Dr. Charles Walter Clarke.

Although the rate "is the lowest in our military history," venereal disease is still "a leading cause of lost man days among the armed forces," Dr. Clarke states in the annual report. "Indications of increased venereal disease prevalence in civilian communities are causing anxiety among civil and military health leaders. They know that increased civilian rates are likely to be reflected in higher military rates," the report continues.

"The past year's experience again substantiated the basic fact that active, united support by the public of all measures—educational, medical, protective—directed against the venereal diseases is the key to victory against these infections," Dr. Clarke declares. "If these activities are strengthened," he says, "the new discoveries—especially the modern intensive therapy of syphilis and the penicillin treatment of gonorrhea—may make it possible, in the not too distant future, to bring venereal diseases completely under control."

Until the war is won, "the major objective of the American Social Hygiene Association must continue to be helping to keep soldiers, sailors, marines, and airmen at their posts and fit to fight, to keep workers fit to produce the instruments of war, and to protect youth in wartime," the report states in conclusion, keynoting the Association's activities for 1944.

"Unity Against VD" is the title of the Association's report. It indicates stepped-up participation by individuals and community groups in every phase of the Association's activities in 1943. The Association's medical staff members served as consultants to several Federal agencies, it is reported, and participated in the training of Army, Navy, and Public Health Service venereal disease control officers at the Army Medical School, Johns Hopkins University, Harvard University, and the Bethesda headquarters of the U.S. Public Health Service.

The Association gave guidance to one hundred and forty-five affiliated societies and helped form eleven new societies in the course of the year. The cooperation of fifty national voluntary agencies was obtained.

The American Social Hygiene Association, a participating service of the National War Fund, officially represents voluntary health agencies in carrying out the Federal government's venereal disease control program. It is teamed with the Army, Navy, U.S. Public Health Service, and the

[Continued on page 1606]

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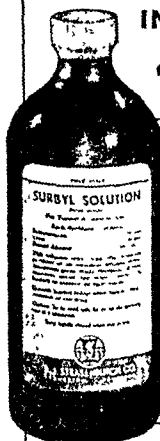
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# Woman's Auxiliary

## To the Medical Society of the State of New York

### County News

**Chautauqua County.** The quarterly meeting of the Chautauqua County Woman's Auxiliary was presided over by the new president, Mrs. Charles E. Goodell. Luncheon was served, followed by a report of the meeting of the House of Delegates of the State Woman's Auxiliary in New York City in May, by Mrs. W. Gifford Hayward. An invitation was extended to the auxiliary by Dr. and Mrs. Hilding A. Nelson for the July meeting, a picnic supper to be held at their new home, Cresthaven, overlooking Chautauqua Lake. There will be no meeting in August.

**Columbia County.** The nurses of the graduating class of the Hudson City Hospital were the guests at a very attractive tea at the home of Mrs. Lawrence J. Early. In addition to the graduating class the guests included the student nurses and faculty of the hospital, Dr. Elah Bliss and Dr. Sue H. Thompson, and Mrs. Ellen O'Reilly, of West Hurley. The house was beautifully decorated with flowers, the arrangement of white lilacs, lilies of the valley, and red tulips centering the tea table being especially lovely. Mrs. Hugh Henry, of German-town, Mrs. W. D. Collins, Mrs. O. H. Bradiey, and Mrs. R. L. Bowerhan, of Copake presided, assisted

by Mrs. C. L. Schultz, of Philmont, Mrs. R. D. Shaw, of Stottville, and Miss Elizabeth Parks.

**Oneida County.** Officers were elected at the annual meeting of the Oneida Auxiliary at a breakfast at the Yahnundasis Golf Club, with thirty-seven members in attendance. Reports of the annual meeting of the House of Delegates of the Women's Auxiliary, held in New York City, were given by the delegates, Mrs. D. D. Reals, Mrs. B. F. Golly, Mrs. F. M. Miller, Jr., Mrs. H. W. Jones, and Mrs. William Hale.

Mrs. B. F. Golly is the new president for Oneida County; the announcement was made that Mrs. F. G. Jones, the past president, had been elected to the office of treasurer in the State Society.

The next meeting will be held in October.

**Rensselaer County.** Mrs. W. W. St. John presided at the annual meeting, held in the Y.W.C.A. Luncheon was served and the officers for the coming year were elected. Mrs. J. J. Noonan is the incoming president. Reports from the officers and standing committees for both the year and the preceding month were given and tentative plans were discussed for an outing to be held in July at the Troy Country Club.

### THE BEDSIDE MANNER

One of the most important characteristics of great men in medicine who have inspired and deserved our admiration and affection is the "bedside manner." The term as used here connotes depth of learning and sincere concern for the patient, which is the only sound basis for confidence in a doctor. This "manner" has been and is seen at its best in consultation in the sickroom, for here the consultant observes meticulous consideration for his fellow practitioner, whose guest he is for the moment. There is nothing finer than this relationship in medicine.

Recently a Washington physician was quoted as saying that something should be done to prevent physicians from suggesting to patients that they have been carelessly or badly treated at the hands of a previous attendant. The implications in this statement are that doctors as a rule are unfair to each other. It can be safely said that rarely does a physician with malice aforethought disparage another practitioner in the presence of a patient. On the other hand, physicians have not always been as diligent as they might be to explain to a patient coming to them from another doctor that a sense of dissatisfaction or distrust may be based on misunderstanding or a faulty evaluation of results. Withholding a judiciously favorable comment on a colleague may really leave a physician open to serious criticism. For, as Robert Louis Stevenson observed, "One may sit in a room and listen in silence while a friend is attacked and leave the room

having more completely condemned his friend than if he had spoken."

It is not meant to suggest that malpractice should be condoned or defended but merely that physicians be extremely cautious and fair toward a previous attendant when they find themselves being credited with exceptional ability and judgment. Indiscretion is usually a boomerang. It would be too bad if it injured only the sender. Not infrequently when badly aimed or well aimed with bad intentions, it may become a dangerous instrument, resulting in damage to the patient, the doctor, and the entire medical profession. A boomerang might just as well be swung gently and carry a message of good will, to restore confidence to a doubting and unhappy patient, returning to give the sender a feeling of satisfaction in a deed well done.

Possibly the noise and confusion of the times may tend to dim the appeal of the Golden Rule. More, perhaps, than ever before we are called upon to be our brother's keeper. To serve our brother best, we must observe proper rules of conduct actively rather than passively. The Rule does not say we must not do unto others what we do not want them to do unto us but rather *do* unto others as we would have them *do* unto us. This, it would seem, is the keynote of the "manner" at the bedside as regards our fellow physicians. A fine "bedside manner" in the office, on the street, and even "off the record" is the medical man's finest attribute.—J. W. L., in *Med. Annals, District of Columbia, May, 1944*

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*Riboflavin:* Not less than 0.7 nor more than 1.6 mgs. per pound.

*Iron:* Not less than 8.0 nor more than 12.5 mgs. per pound.

This was War Food Order No. 1, Amendment No. 1, issued April 25 and published April. 29.

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The War Shipping Administration announces that the new minimum standard requirements for drugs, chemicals and surgical supplies to be carried on all vessels owned or under charter to WSA have been revised and extended.

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# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N.Y. Acknowledgement of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

## RECEIVED

**Something New About Health and Healing.** By P. F. Van Den Daele. Duodecimo of 288 pages. Boston, Christopher Publishing House, 1944. Cloth, \$3.00.

**Forsdike's Textbook of Gynaecology.** By J. H. Peel, B.M. Revised edition. Octavo of 440 pages, illustrated. New York, Grune & Stratton, 1944. Cloth, \$5.75.

**Sternal Puncture. A Method of Clinical and Cytological Investigation.** By A. Piney, M.D., and J. L. Hamilton-Paterson, M.D. Second edition. Octavo of 69 pages, illustrated. New York, Grune & Stratton, 1943. Cloth, \$3.50.

**A National Health Service.** By the Ministry of Health, Department of Health for Scotland. Octavo of 85 pages. New York, Macmillan Co., 1944.

**Virus Diseases in Man, Animal and Plant.** By Gustav Seiffert. Translated by Marion Lee Taylor. Octavo of 332 pages, illustrated. New York, Philosophical Library, Inc., 1944. Cloth, \$5.00.

**The Psychology of Women. A Psychoanalytic Interpretation. Vol. 1.** By Helene Deutsch, M.D. Octavo of 399 pages. New York, Grune & Stratton, 1944. Cloth, \$4.50.

**Fundamentals of Psychiatry.** By Edward A. Strecker, M.D. Second edition. Duodecimo of 219 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1943. Cloth, \$3.00.

**Practical Malaria Control. A Handbook for Field Workers.** By Carl E. M. Gunther, M.D. Duodecimo of 91 pages. New York, Philosophical Library, Inc., 1944. Cloth, \$2.50.

**Tuberculosis of the Ear, Nose, and Throat: Including the Larynx, the Trachea, and the Bronchi.** By Mervin C. Myerson, M.D. Octavo of 291 pages, illustrated. Springfield, Ill., Charles C Thomas, 1944. Cloth, \$5.50.

**The Diet Therapy of Disease. A Handbook of Practical Nutrition.** By Louis Pelner, M.D. Quarto of 143 pages, illustrated. New York, Personal Diet Service, 1944. Cloth, \$3.75.

**Medical Diagnosis. Applied Physical Diagnosis.** Edited by Roscoe L. Pullen, M.D. Quarto of 1106 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$10.

**The American Illustrated Medical Dictionary. A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc.** By W. A. Newman Dorland, M.D., Lt. Col., MRC, USA. Twentieth edition, revised. Octavo of 1,608 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth. Plain, \$7.00. Thumb-indexed, \$7.50.

## REVIEWED

**Reaction to Injury. Pathology for Students of Disease Based on the Functional and Morphological Responses of Tissues to Injurious Agents.** By Wiley D. Forbus, M.D. Quarto of 797 pages, illustrated. Baltimore, Williams & Wilkins Co., 1943. Cloth, \$9.00.

Two of the four parts of this work have already appeared. The other two parts are in the process of completion, and the reviewer hopes that they will soon be published. The work is intended as a text on pathology for students of disease and fulfills that purpose successfully.

The author's approach to the subject of pathology is novel. Part One is devoted to the nature and causation of disease and Part Two to the "completed treatment of the resistive action to injury." Quoting further from the preface, "the remaining two parts, one dealing with the submissive type of reaction and the other with the reaction of adaptation, are in preparation. Although it naturally would have been best to have the work appear in its completed form, the prevailing conditions make the publication of the first two parts particularly appropriate, since they constitute a clearly defined entity dealing with the infectious diseases. In its present form the book can be used satisfactorily as a text for the course in pathology for students of the second year when properly supplemented by lectures and case work. Its application to the problems of

the general practice of medicine, especially to military medicine, will be obvious from a study of the table of contents."

The author has successfully achieved his purpose and has presented the subject from a most interesting and educational point of view. The subject matter is well and appropriately illustrated; the kodachrome reproductions are particularly striking and beautiful. The reviewer looks forward with considerable expectation to the completion of this work. It may well be recommended to the clinician as well as to the laboratory worker. Certainly it is a book without which no modern laboratory library could be complete.

MAX LEDERER

**Minor Surgery.** By Frederick Christopher, M.D. Fifth edition. Octavo of 1006 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$10.

The fifth edition of *Minor Surgery* has had numerous additions which greatly enhance the value of this excellent treatise. The directions for handling minor and minor-major problems are explicitly indicated and in many cases well illustrated. The book is a valuable addition to the library of the busy practitioner, who, now more than ever, is called upon to treat minor surgical problems. The bibli-

[Continued on page 1612]



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[Continued from page 1610]

ographies and index are adequately presented so as to facilitate ready reference to the text and further study.

IRWIN E. SIRIS

**Clinical Tropical Medicine.** By twenty-seven authors. Edited by Z. Taylor Bercovitz, M.D. Quarto of 957 pages, illustrated. New York, Paul B. Hoeber, Inc., 1944. Cloth, \$14.

This book contains a comprehensive presentation of those disease entities, both exotic and indigenous to this country, which are commonly thought of as tropical diseases.

The editor and twenty-six other authorities well known for their contributions in this field have written sections on the diarrheal diseases, helminthic diseases, and on the diseases caused by the blood protozoa, the spirochetes, rickettsiae, viruses, bacteria, and yeasts and fungi. There are also sections on the nutritional diseases, tropical snakes and poisonous insects, and on tropical hygiene and sanitation. Laboratory diagnosis is not particularly stressed, but neither is it neglected. Illustrations are numerous, clear, and informative. It is an excellent book either for text or for reference.

ELBERTON J. TIFFANY

**Essentials of Gynecology.** By Willard R. Cooke, M.D. Octavo of 474 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1943. Cloth, \$6.50.

This book is primarily for the medical student and the general practitioner. It has grown out of author's extensive teaching and clinical experience.

The opening chapter is on the anatomy of the female pelvis and its contents. The illustrations of this and of most subsequent chapters are excellent and largely original. Considerable space is devoted to a consideration of extrapelvic pathology and psychologic factors affecting the patient. The general body of the text is clearly presented and concise. There is a section on both pre- and postoperative care of the patient. It does seem out of place in such a work to outline without illustration the more common gynecologic operations.

The book is an excellent guide for students and one which general practitioners will find both interesting and helpful.

ONSLow A. GORDON

**The Principles and Practice of Medicine.** Originally Written by Sir William Osler, Bart., M.D., F.R.C.P., F.R.S., Designed for the Use of Practitioners and Students of Medicine. By Henry A. Christian, M.D. Fifteenth edition. Octavo of 1,498 pages. New York, Appleton-Century Co., Inc., 1944. Cloth, \$9.50.

As one turns the pages of this fifteenth edition, the totality of the amount of material presented is impressive. Monographic handling is not possible, even in an Osler, but discussion is generally thorough, nevertheless.

The book handles well (4 1/4 pounds) and the page reads easily, the type being particularly clear. References in heavy type continue to be very valuably presented. There are many homely phrases, some from the pen of the master, but we suspect the present editor is aware of the driving power of a pat quotation.

Christian has produced his best edition. The introductory remarks dealing with psychosomatic medicine, though brief, are inspired.

No special chapters can be singled out for commendation. General excellence prevails, as always in Osler. Therapy is not bold; indeed, it is often characterized by conservatism. Penicillin, "un-



tion of this wonder drug. Uracil in goiter is discussed and appraised. Copper as a catalyst in the anemias is not considered.

ad: "growing  
ky Mountain  
and the rare  
syphilitic factor in Addison's disease is not mentioned.

The chapter on arthritis continues to be utterly inadequate and not up to standard. It is confusing, not in line with the concepts in this disease which are becoming more clear, and should be rewritten. A chart contrasting the features of the atrophic and hypertrophic types would be clarifying, and is respectfully urged.

FRANK BETHEL CROSS

**Recent Advances in**  
**tory Therapeutics.** By  
D.P.H., and E. C. Dodds. Philadelphia,  
Octavo of 412 pages, illustrated. Philadelphia,  
Blakiston Co., 1943. Cloth, \$5.50.

The recent edition of this British book brings  
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A very proper allotment of space is given to diabetes, its management, and some complications. Liver function tests are covered very conservatively. Addison's disease, electroencephalography, and the hormones are briefly discussed. There is a good chapter on blood disorders. The volume continues to be interesting and useful.

A. M. BABBY

**Office Endocrinology.** By Robert B. Greenblatt, M.D. Second edition. Octavo of 243 pages, illustrated. Philadelphia, Blakiston Co., 1944.

most important in the field of endocrinology. It is a daily office practice; it is even more difficult to condense this material into a small volume. Dr. Greenblatt has done a remarkable job of selection and condensation; his presentation is clear, easily readable, and palatable for the practitioner whose limited time does not permit perusal of more voluminous texts. The references after each chapter will help those who wish more detailed information.

M. A. GOLDZIEHER

**Medical Physics.** By Otto Glasser, Ph D., Editor-in-Chief, and others. Quarto of 1,744 pages, illustrated. Chicago, Year Book Publishers, Inc., 1944. Cloth, \$18.

many to add this work to their reference library. Haden and Ponder have useful material on blood studies; Hamilton has several fine papers on blood volume, blood plasma, and lung circulation. John Talbott presents up-to-date material on the ill effects of high altitude and of excessive heat.

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Many important advances in treatment and in routine clinical and laboratory methods of diagnosis are included in this edition. The sulphonamide drugs, vitamins and a special article on Penicillin are among the new subjects presented. 43 Illus. 412 Pages. \$5.50 (1943)

## **Recent Advances in Pathology**

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This book presents a concise account of the many advances in pathology based upon extensive research work. New material includes chapters on Vitamin Deficiency and Essential Hypertension. Section on Crush Syndrome, Extra-Renal Azotemia, Etiology of Rheumatic Fever, Cancer Research, Pathogenesis of Pneumonia, Regional Ileitis, Lipoid Pneumonia, Bronchial Adenoma, Pyelonephritis, are included. 35 Illus. 346 Pages. \$5.50 (1942)

## **Hughes' Practice of Medicine**

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This book provides a concise account of various diseases, their diagnosis and treatment. It is ideally suited for reference to the essential features of each condition. Choice prescriptions are given and the essential procedures in after care are discussed. 36 Illus. 791 Pages. \$5.75 (1942)

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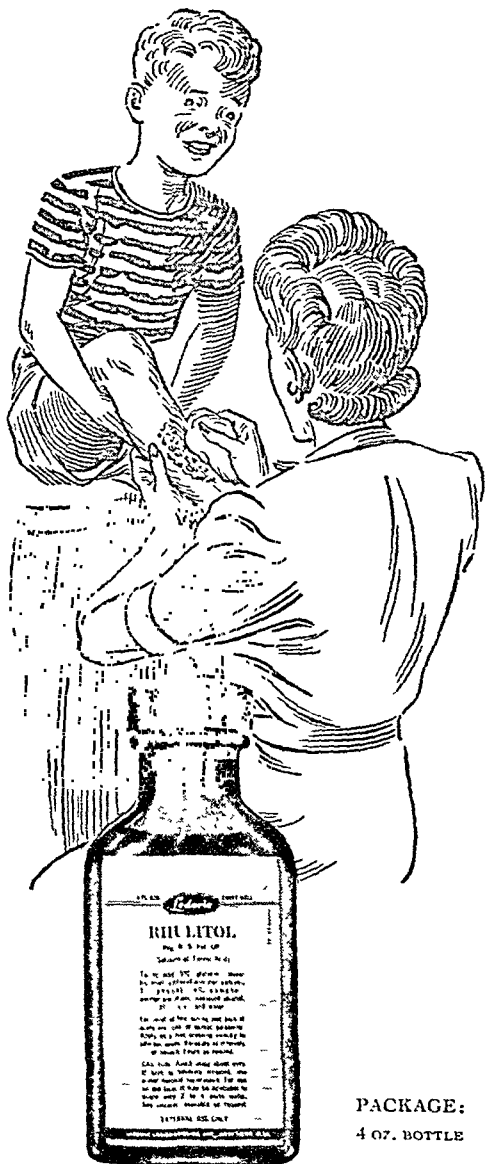
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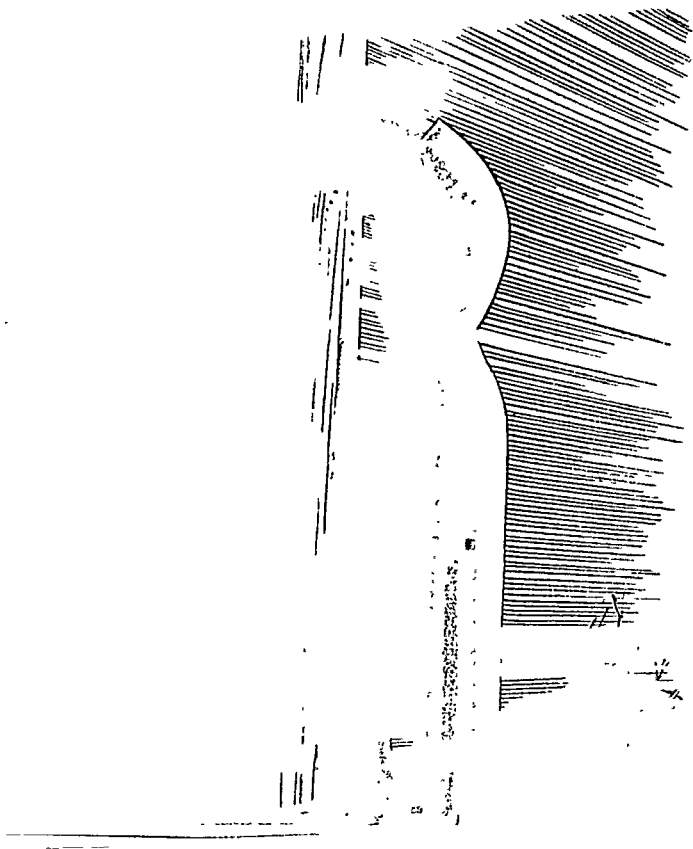
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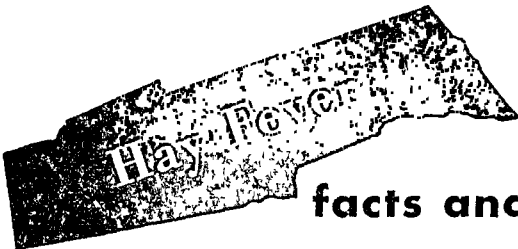
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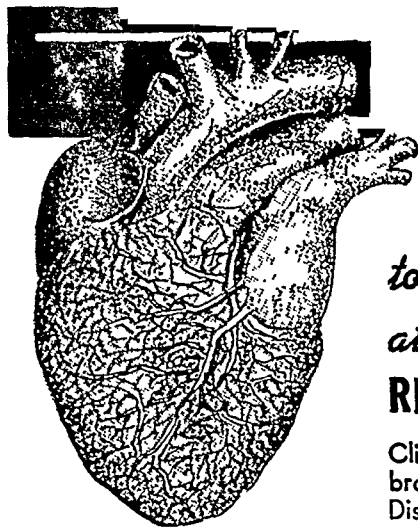
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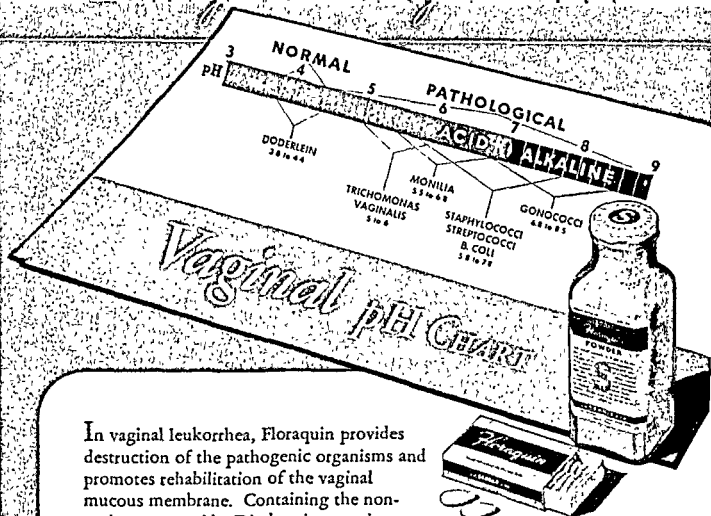
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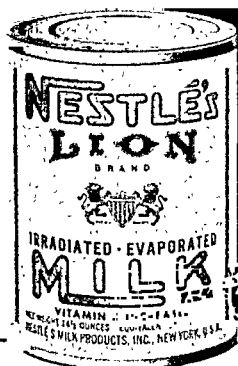
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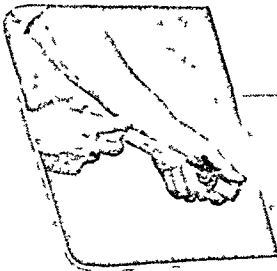
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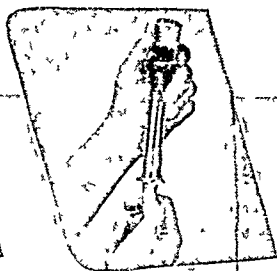
is instituted late in the course of the disease, penicillin in many instances will prove effective if adequately high dosage is used for the proper length of time.

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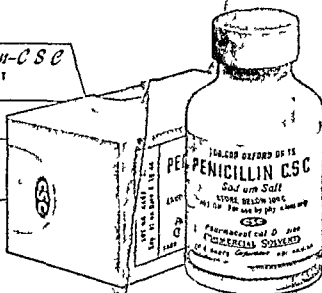
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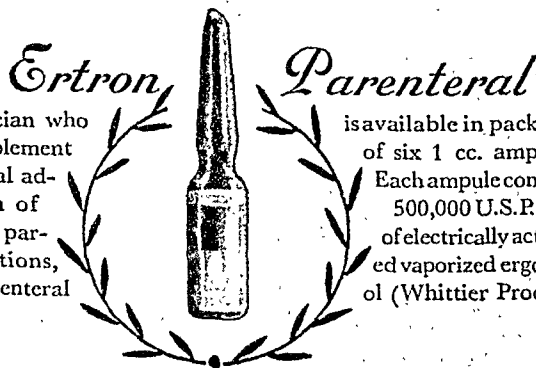
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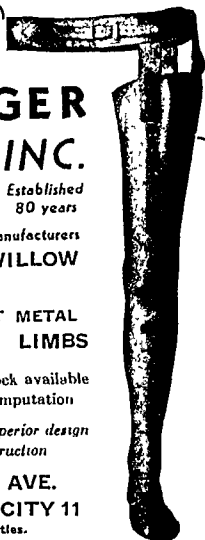
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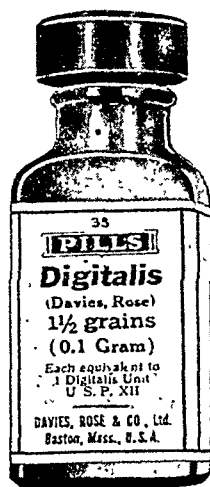
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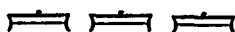
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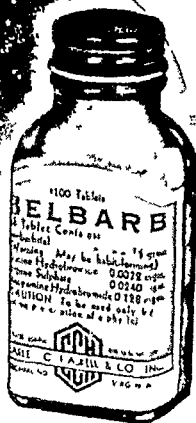
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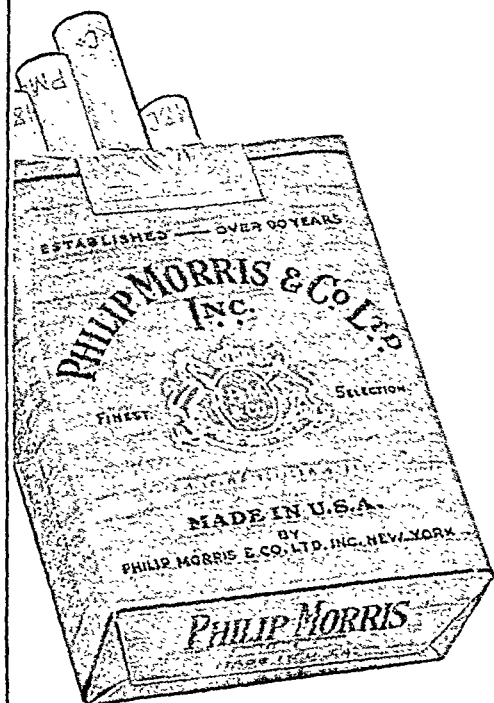
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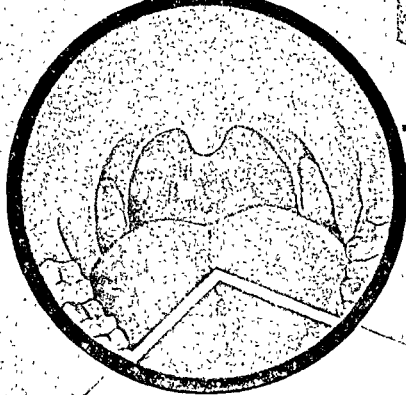
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*\*Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154. Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60. Proc. Soc. Exp. Biol. and Med., 1934, 32, 241. N. Y. State Journ. Med., Vol. 35, 6-1-35, No. 11, 590-592.*

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## Editorial

### Continuous Medical Education, II

The matter of continuous medical education in this nation was discussed editorially in this JOURNAL in the issue of July 15, 1944. It seems likely that the present policy of the armed forces, if continued, will result in an annual deficit of some 2,000 doctors. The House of Delegates of the A M A at its 1944 meeting

on the recommendation of the Council on Medical Education and Hospitals of the American Medical Association passed the following resolution at its opening session, June 12

students will inevitably result in an overall shortage of qualified physicians, with imminent danger to the health and well being of our citizens therefore be it

*Resolved, that it is imperative that immediate action be taken by the President or the Congress of the United States to correct the current drastic regulations, which result in a restriction of the number of students qualified to enter the courses of medical instruction in approved medical schools'*

This resolution was sent to the President, the Secretaries of War and the Navy, the Selective

Service System, and all members of the House and Senate Military Affairs committees

The latest measure still further jeopardizing medical education and medical care was the passage of the Army appropriation bill by Congress June 21. This bill includes the following provision

Provided that no appropriation contained in this Act shall be available for any expense incident to education of persons in medicine (including veterinary) or dentistry if any expense on account of this education in such subjects was not being defrayed out of appropriations for the military establishment for the fiscal year 1944 prior to June 7, 1944

This provision would seem to eliminate from 1946 entering medical classes the 28 per cent of places contracted for by the Army. Even if the Navy increases its quota from 25 per cent to 31 per cent, schools will be obliged to obtain 69 per cent of their students from women and physically disqualified males. Nothing even approaching this number of qualified civilian students is available. Classes will probably be half filled in the country at large.

So serious does this situation appear to be that all physicians must take immediate cognizance of it. The J A M A<sup>1</sup> says editorially

<sup>1</sup> J A M A 125 708 (July 8) 1944

"Should an adjustment not be made to correct the present alarming situation, a tremendous reduction of graduates after the war will ensue. Although schools will continue the accelerated program, they will admit classes only once annually instead of every nine months. This of itself will reduce the number of graduates from the present annual average of 7,000 to 5,000. If classes can be only half filled, this number will be reduced to 2,500 graduates per year. Since 3,300 to 3,500 physicians die each year, there will result an annual and cumulative deficit of 2,000 doctors a year.

"Still further reductions in graduates and permanent damage to the 'plant' of medical education will result from some schools being forced to close their doors because of drastically curtailed enrollments. An unknown number of war casualties among medical officers will also reduce the supply of physicians.

"These reductions in medical graduates will occur in the face of new and increased demands for medical services, mainly from the civilian population, the standing army and navy, the Veterans Administration and the liberated countries of Europe.

"Full support should be forthcoming from the medical profession for the Miller bill (*H.R. 5128*), with modifications, which reads:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That Section 5 of the Selective Training and Service Act of 1940, as amended, is amended by inserting at the end thereof a new subsection reading as follows:

"(n) There shall be deferred from training and service under this Act in the land and naval forces of the United States, as necessary to the maintenance of the national health, safety and interest, in each calendar year not less than 6,000 medical students and not less than 4,000 dental students. As used in this subsection the term "medical or dental student" means (1) a person who is enrolled in, and who is pursuing a course of instruction prescribed for the degree of doctor of medicine at an accredited medical college; and a person who is enrolled in, and who is pursuing a course of instruction prescribed for the degree of doctor of dentistry at an accredited dental college; or (2) a person who is pursuing a regular course of instruction at an accredited college or university

(satisfactory completion of which will make such person eligible for enrollment in an accredited medical or dental college) with the bona fide intention of entering an accredited medical or dental college and pursuing and completing the course of instruction prescribed for the degree of doctor of medicine or for the degree of doctor of dentistry.'

"Protests against the blind disregard for medical care in the future should be addressed to the Senate (Senator Robert R. Reynolds, chairman) and House (Representative Andrew J. May, chairman) Committees on Military Affairs, the Senate Committee on Education and Labor (Senator Elbert D. Thomas, chairman), and the House Committee on Education (Representative Graham A. Barden, chairman). Every state medical society, medical school, and medical scientific society should express itself in no uncertain terms on these developments."

We take this second opportunity to bring this highly important matter to the attention of our readers and the appropriate committees of the Medical Society of the State of New York. Delay on a matter of such importance to the health and welfare of the nation may be disastrous indeed. All readers are urged to register their individual protests as called for by the A.M.A., without loss of time, to the Senate and House Committees on Military Affairs, the Senate Committee on Education and Labor, and the House Committee on Education.

The seriousness of interruption to the program of continuous medical education cannot be overestimated. Such legislation as may be necessary to resolve the present impasse between the Army and Navy and the Selective Service System is hereby called for in the interest of the maintenance of the national health without which industrial production and the provision of the sinews of war would undoubtedly be drastically curtailed.

## Politics Again?

Now, in addition to *S. 1161*, we find *H.R. 4371*, introduced in the House of Representatives in March, 1944. We hope most of our membership is by now familiar with the questionable medical and hospitalization provisions of the Wagner Bill. We are indebted to *Industrial Medicine*<sup>1</sup> for calling attention editorially to *H.R. 4371*, which

supersedes *H.R. 2800*. Says *Industrial Medicine*:

This is a bill that ought to have a lot of publicity, principally because its progress and that of *H.R. 2800*, which it supersedes, have been directed so secretly, and so suddenly. These bills express the Perkins-inspired effort to have the Department of Labor take over the industrial hygiene activities of the various states. Hearings on the original bill

were held on five days in June, 1943, and no one connected with the U S Public Health Service or any state department of health knew about these hearings until after they had been concluded. *H R 4371*, now pending, aims to provide for the Labor Department to cooperate with "state agencies administering labor laws in establishing and maintaining safe and proper working conditions in industry and in the preparation, promulgation, and enforcement of regulations to control industrial health hazards." It would authorize \$5,000,000 a year to be allotted, by the Secretary of Labor, "for use by cooperating state agencies administering labor laws on the basis of (1) the population, (2) the number of wage earners, (3) the special safety and health problems in industry, (4) the number of workers afforded protection by the state laws and the cost of proper and efficient administration of such laws, and (5) the financial needs of the respective states." The money so allotted to any state "shall be extended solely in carrying out the purposes specified and in accordance with rules and regulations prescribed by the Secretary and the plans jointly developed by the agency administering the labor laws of such state and the Division of Labor Standards and approved by the Secretary of Labor. In the operation of such plans the available services and facilities of public health authorities in the field of industrial hygiene shall be utilized." The Secretary is to have a "Safety Advisory Commission . . . hereby authorized and directed to recommend . . . reasonable standards, methods, and procedures for establishing safe working conditions in industry with a view to encouraging more effective control of hazardous conditions by the several states." There will be the usual "such employees," appointed by the Secretary, and the usual fixing of their compensation. An additional quarter million per year for "all necessary expenses" in administration is to be provided. The [quoted] lines indicate the important additions to *H R 2800* which appear in *H R 4371*.

Referring to the statements in quotation marks above, *Industrial Medicine* asks

Are these "weasel words?" Does the "shall be" mean that the "available services" are to be asked, or to be ordered? Or will the next step be to insure the desired state cooperation by holding out the bait of larger allocations from the five million to those states which will transfer their industrial hygiene activities from the state health to the state labor departments. In some such way the "available services and facilities" could be got around and wouldn't be needed. No one familiar in any respect with current bureaucratic interpretations of Acts of Congress, nor past bureaucratic pressures on state governments through allocations of Congressionally appropriated funds, can fail to foresee the conflicts of authority, the confusions and duplications, and the insidious pressures that are inevitable here. But here the possibilities are more or less evident. What else lurks in the disguised intentions of the smooth way in which the "enforcement of regulations to control industrial health

hazards" is woven into the text of the bill? Or in the powers delegated to the "Safety Advisory Commission," which would authorize it to confuse and interfere with health regulations and procedures already put into satisfactory effect by the public health authorities? And the carefully detailed basis of the allotments by the Secretary, to the "cooperating state agencies administering labor laws?" Why not the "cooperating state agencies administering health laws?" But that, of course, is a foolish question!

There is no doubt about the political education which is being afforded the profession of medicine, perhaps as a postgraduate study, by the authors of much current legislation. Much of it concerning medicine unfortunately simply serves to arouse suspicion, distrust, and lack of confidence, provokes doubt and skepticism and a presumption of bad faith, is looked at askance by physicians, and scrutinized with the microscope, as it should be, for evidence of duplicity, skulduggery, rascality, and all manner of naughtiness.

The unctuous rhetoric that oiled the arguments of the Labor Department for this bill, says *Industrial Medicine*, revolved around the lost time and cost of industrial accidents and the need for accident control. The accident situation was likewise the burden of the other testimony heard by the Committee.

When it became noised abroad that the almost *ex parte* hearings on the first bill had been held, a salvo of cogent arguments against it was prepared for the information of the Congressmen. These arguments are implicit in the circumstances.

1 Industrial hygiene is a health matter, not a labor matter.

2 Industrial hygiene activities are now being handled, and excellently handled, by the Federal and state public health officers, through their Divisions of Industrial Hygiene, and their sanitary, engineering, laboratory, nutrition, and other public health facilities.

3 The present effort to extend the scope of the Labor Department's authority to the control of industrial health hazards and to "special safety and health problems in industry," in so far as health and health hazards are concerned, disregards the obvious fact that such extension would duplicate existing facilities. This duplication is completely unnecessary—so patently unnecessary as to label the efforts to bring it about bureaucratic and political in the worst sense in which these terms are critically employed, to say nothing of the fact that the proposal involves a wholly needless expenditure of taxpayers' money.

4 Health departments have the ability to carry on health and hygiene services impartially. This is inherent in their professional status, for this status not only demands the ability but also imposes the duty to be impartial. No physician, no engineer, will risk his reputation by being anything but im-

partial. This, however, cannot be said of those whose tenure of position depends on the good will of pressure groups, graded preferences, and partialities. . . .

From the standpoint of all persons interested in health, and this includes everyone—physicians, hygienists, employers, and employees, whether they belong to a union or not—this bill should be defeated. This for the reasons above mentioned and the further reason that it is not honest. If it were honest, its avowed purpose would be to improve health, and the five million would go to the state and Federal health agencies instead of only to "cooperating state agencies administering labor laws." The existing health agencies could use more money. Their combined budgets for the best year they ever had weren't half of five million. They know how to spend money wisely and effectively for health purposes, and they have done and are doing a fine job. They are experts, qualified by profession and by experience, and they do not need nonmedical competition. Instead, they need help. They could use more appropriations and more personnel. A little of both distributed among them would enable them to add more to what they are now doing for health than many times as much would enable the Department of Labor to do in toto in ten times the same period.

With this opinion we are in complete agreement. Overreaching by governmental

departments must also be discouraged. As *Industrial Medicine* concludes:

We have no idea regarding what the Department of Labor might accomplish in safety, if it confined its overreaching to that alone. But we do have a good picture of what it cannot accomplish in industrial health and hygiene. That picture includes everything except more offices, more power, more pressure on the states to "cooperate," and more confusion. Meanwhile, how is anybody's health going to be improved? Health cannot be legislated into a plan, any more than disease can be "collectively bargained" out of it. . . .

Education plays an important role in accident control, and if the Secretary of Labor and her advisers were as primarily interested in safety as they would have us assume, the facilities of her department would be forcibly brought to bear on the one safety measure that will really reduce accidents: "safety education."

Here, we think, is a legitimate and proper activity for the Federal Department of Labor and one which would certainly promote increased production and have the enthusiastic cooperation of physicians.

<sup>1</sup> Vol. 13, No. 5, May, 1944, p. 406 *et seq.*

<sup>2</sup> Committee on Labor, whence it emerged with majority approval; but a minority report by Rep. A. L. Miller (Nebraska) caused it to be sent to the Committee on Rules.

## Pelvioradiography

Prophylactic measures do not always consist of specific inoculations, specific chemotherapy, or isolation procedures. It is generally acknowledged that more accurate estimation of the capacity of the obstetric pelvis has contributed much to the decrease in maternal and fetal morbidity and mortality of the last decade. Obstetricians now realize that external and internal pelvimetry suffer from limitations which not infrequently fail to give a true picture of the architecture of the pelvis. The superiority of roentgen measurements over clinical calculations of abnormal pelvis has been amply demonstrated.<sup>1,2</sup>

Recent studies of pelvioradiography have only served to confirm and extend its usefulness in obstetric prophylaxis and treatment.<sup>3</sup> Two hundred and eighty cases of anticipated dystocia were investigated by a meticulous technic fully described in the paper referred to above.<sup>3</sup> The fetal head is always simultaneously studied in relation to the size of the pelvic outlet and its probable ability to effect safe passage. While the ample pelvis could be diagnosed clinically almost as well as by x-ray studies, a marked discrepancy was revealed when the contracted pelvis was subjected to both procedures. Only 59 per cent of contracted pelvises were correctly

suspected by clinical pelvimetry, while by pelvioradiography the percentage of accurate diagnoses was 84 per cent. Needless to say, to arrive at a true obstetric diagnosis the obstetrician should blend the knowledge obtained from both clinical and x-ray sources. Cesarean operation was indicated with great accuracy if pelvioradiography revealed a contracted pelvis, yet that this method was conservative was demonstrated by the fact that only 40 per cent of this dystocia series was subjected to operation.

Pelvioradiography has already played a role in reducing the number of stillbirths and in decreasing maternal morbidity. It should become an important feature of the obstetric armamentarium in the management of dystocia. Such procedures are a valuable prophylactic measure in saving and conserving lives and preventing illness. They are of the same order as the prophylactic measures of vaccination and inoculation against contagious diseases.

<sup>1</sup> Caldwell, W. E., Moloy, H. C., and D'Esopo, D. Anthony: *Am. J. Obst. & Gynec.* 28: 482 (Oct.) 1934; *ibid.* 32: 727 (Nov.) 1936; *ibid.* 36: 928 (Dec.) 1939.

<sup>2</sup> Scadron, Samuel J., and Rappaport, Emanuel M.: *J.A.M.A.* 112: 2492 (June 17) 1939.

<sup>3</sup> Weinberg, A., and Scadron, S. J.: *Am. J. Obst. & Gynec.* 46: 2, 245 (Aug.) 1943.

# CLINICAL EXPERIENCE WITH PENICILLIN\*

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IT IS not quite four years now since an interest in penicillin was first awakened in this country. In the brief space of time that has since elapsed, outstanding progress has been made in solving the many complex problems involved in the large-scale production of penicillin. It was only two years ago that penicillin first became available in sufficient quantity to permit even the most limited clinical investigation. Today penicillin is being supplied to hospitals in every part of the country.

Last summer the Committee on Chemotherapeutics and Other Agents of the National Research Council, under the Chairmanship of Dr. Chester S. Keefer, reported on the use of penicillin in 500 cases.<sup>1</sup> The results of treatment in several thousand cases are now available, but even this experience can be regarded as only a beginning, and the next year or two will undoubtedly see a tremendous increase in our knowledge of both the possibilities and the limitations of penicillin therapy.

Since many of the problems involved in the use of penicillin arise from its peculiar pharmacologic properties, I should like to review briefly the important work done by Dr. Rammelkamp and Dr. Keefer on the absorption, distribution, and excretion of penicillin.<sup>2</sup> I should perhaps first define the Oxford unit, since it will be referred to frequently in the discussion that follows. Chemical assay of penicillin is not yet possible, and the drug must, therefore, be measured in terms of its antibacterial activity. The Oxford unit is an arbitrary standard, and by definition is "that amount of penicillin which, when dissolved in 50 cc. of meat extract broth, just completely inhibits the growth of the test strain of *Staphylococcus aureus*."

Penicillin is rapidly inactivated by the hydrochloric acid of the gastric juice, and following oral administration very little, if any, of the drug appears in the blood. Absorption from the rectum is also poor. When penicillin is introduced directly into the duodenum, slightly better absorption occurs, but efforts to treat patients by this route have not been successful.

It is apparent at once, then, that adequate absorption of penicillin cannot be obtained by enteral administration.

Following intravenous injection, the concentration of penicillin in the blood reaches an immediate peak and then rapidly falls. The persistence of penicillin in the blood depends somewhat on the amount injected, but even with fairly large doses very little of the drug can be detected in the blood after two hours.

The reason for this rapid disappearance of penicillin from the blood becomes clear when one studies the excretion of penicillin by the kidney. In patients with normal renal function, the drug appears in the urine within two to three minutes after injection, and at the end of one hour an average of 58 per cent of the amount injected will be excreted by the kidney. In patients with impaired renal function, excretion is delayed and is not so complete. In such cases, fairly high blood levels may be maintained for relatively long periods of time.

Records have been kept of the blood level curves obtained after the administration of 10,000 units of penicillin by three different routes. The typical curve that follows intravenous injection we have already noted. After intramuscular injection, the concentration in the blood rises somewhat more slowly and reaches a lower peak. The peak level, however, is sustained for a slightly longer period of time than after intravenous injection.

Subcutaneous injection produces a low concentration in the blood. The subcutaneous injection of penicillin is often painful, and the usefulness of this route appears to be limited.

From these studies, it is clear that if effective amounts of penicillin are to be maintained in the body throughout treatment, the drug must be given at frequent intervals by intravenous or intramuscular injection. The use of a continuous intravenous drip is also a satisfactory method of administration and probably permits the most efficient utilization of the drug. When the drip is properly regulated, it is possible to maintain a more or less constant level of penicillin in the blood at all times. This advantage is somewhat offset, however, by the increased inconvenience that it causes both the patient and those taking care of him.

Studies on the distribution of penicillin in the body after intramuscular or intravenous injection revealed that the drug does not pass into the cerebrospinal fluid, and that none, or at the most an insignificant amount, passes into the

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From the Evans Memorial and Massachusetts Memorial

search and Development from supplies assigned by the Committee on Medical Research for clinical investigations recommended by the Committee on Chemotherapeutics and Other Agents of the National Research Council.

various serous spaces of the body. It follows, then, when one is treating infections of the meninges, of the body cavities, or of the joints, that the introduction of penicillin locally into the infected cavity is desirable. Since absorption from these sites is slow, penicillin need be introduced only once or twice daily.

In vitro tests of bacterial susceptibility have been of great value in guiding clinical studies.<sup>3</sup> The following list includes the more important pathogens that have been found to be sensitive to the action of penicillin:

Gonococcus	Streptococcus viridans
Meningococcus	(most strains)
Hemolytic streptococcus	Clostridium tetani
Pneumococcus	Clostridium welchii
Staphylococcus	Corynebacterium diphtheriae
Nonhemolytic streptococci (most strains)	Actinomyces bovis
	Treponema pallidum

Except for the gonococcus and the meningococcus, the susceptible organisms are all gram-positive bacteria. These various species differ significantly in their relative sensitivity to the action of penicillin. They are listed here in the general order of their susceptibility, those at the top of the list being inhibited by much smaller amounts of penicillin than those at the bottom. It is also well recognized that different strains of the same species may exhibit marked differences in susceptibility.

The following list includes some of the more important pathogens that have been found to be insensitive to the action of penicillin. It can be seen that penicillin has no effect against the whole group of gram-negative bacilli.

Enterococcus	Pseudomonas aeruginosa
Escherichia coli	
Bacillus typhosus	Friedländer's bacillus
Bacillus paratyphosus	Brucella group
Bacillus dysenteriae	Mycobacterium tuberculosis
Haemophilus influenzae	
Haemophilus pertussis	Pasteurella pestis
Haemophilus ducreyi	Pasteurella tularensis
Vibrio cholerae	Yeasts
Bacillus proteus	Molds

It might be added that preliminary studies have shown that penicillin has no action against the viruses.

Susceptible bacteria have been made penicillin-fast in the test tube by adapting them to increasing concentrations of the drug, and the development of drug-fastness during the treatment of clinical infections has been observed on several occasions.<sup>4</sup>

Regarding the mode of action of penicillin in human infections, it is now quite clear that its

action is bacteriostatic rather than bactericidal. In patients who eventually recover, blood cultures and cultures of the local lesions often remain positive for several days after the beginning of therapy, and relapses have been frequently observed when penicillin has been discontinued too soon after the first signs of improvement have appeared or after the first negative cultures have been obtained.

From this fact—that the action of penicillin is bacteriostatic rather than bactericidal—it follows that the duration of treatment is an important consideration in the use of penicillin, and also that the general condition of the patient and the state of his normal defense mechanisms are important factors in determining the outcome of treatment. It has been conclusively shown that even massive doses of penicillin will rarely save a patient who is moribund.

Penicillin is not inhibited by para-aminobenzoic acid, pus, peptones, or the breakdown products of tissue autolysis.

I should like to consider now some of the results that have been obtained with penicillin therapy. As a general rule, we use a solution containing 5,000 units of penicillin per cc. of normal saline and administer appropriate amounts of this solution either intravenously or intramuscularly at three-hour intervals throughout the day and night. For most purposes, the intramuscular route is the more convenient; and when multiple injections are being given, the intravenous route does not seem to offer any particular advantages. In treating seriously ill patients we frequently employ a continuous intravenous drip until definite signs of improvement have appeared, after which time treatment is continued by the intramuscular route. When penicillin is given by a constant intravenous drip, the dosage varies from 5,000 to 20,000 units per hour, depending on the circumstances.

A word about dosage in general. The optimum dosage for most conditions has not yet been determined. Of necessity, efforts to date have been directed toward discovering the minimal effective dose rather than the optimum dose. However, it would appear that for adults a dosage of 15,000 units every three hours is adequate in almost all conditions. Occasionally, in fulminating infections, larger doses may be indicated for a few days until the disease has been brought under control.

The results of penicillin therapy in sulfonamide-resistant gonococcal infections have been widely publicized. The pioneer work in this field was done by Dr. Mahoney, of the United States Public Health Service at the Marine Hospital on Staten Island.<sup>5</sup> Mahoney demonstrated that in males prompt and permanent cure results in 98



to 99 per cent of cases when a total dosage of about 100,000 units is given over a period of twelve to fifteen hours. Many cases respond to even smaller doses. Dr Alfred Cohn of New York has recently demonstrated that equally good results can be obtained in female patients.<sup>6</sup>

Experience with the use of penicillin in meningococcal infections has been limited. In view of the success and simplicity of sulfonamide therapy, it seems unlikely that penicillin will play an important role in the management of meningococcal meningitis except as an adjuvant measure in particularly severe cases.

A considerable group of patients with pneumococcal infections have now been treated with penicillin. Much of this work has been done by Dr Tillett in New York City.<sup>7</sup> In pneumococcal pneumonia, the mortality rate has been in the vicinity of 6 per cent, a result which indicates that penicillin is an effective agent in the treatment of this disease. Whether it will prove to be significantly more effective than the sulfonamides, of course, cannot be determined until many more cases have been studied. The optimum schedule of treatment has not been settled, but it appears from Tillett's work that a total dosage of 200,000 to 300,000 units, given over a period of three or four days, will be adequate for most cases, although recovery has followed the use of even smaller amounts.

*Case 1*—Our patient was a man of 60 whose illness was of more than average severity despite the fact that the blood culture was sterile. He received a total of 200,000 units over a period of seventy-two hours and made a very satisfactory recovery.

Several cases of pneumococcal empyema have cleared without surgical drainage following the daily instillation of 25,000 units of penicillin directly into the empyema cavity over a period of three or four days. Occasionally sterile pus will continue to form, and in such instances thoracotomy usually becomes necessary. In other cases, loculation of the fluid prevents the diffusion of penicillin throughout the cavity. In such cases, surgical drainage must also be resorted to.

It was, of course, hoped that penicillin would significantly improve the outlook in pneumococcal meningitis. Approximately two hundred patients have now been treated, with only 45 per cent recovering.

Most of these patients were treated with penicillin alone. It is possible that the use of penicillin in combination with intensive sulfonamide and serum therapy will give better results. But experience has already shown that even such combined therapy will frequently fail.

*Case 2*—One of our patients was a 79-year-old man in whom treatment was begun after he had

been ill for eighteen hours. The primary focus was never established. Both blood and spinal fluid were heavily infected with *Pneumococcus*, type 12. Large doses of penicillin were given both intravenously and intrathecally, with the result that after twenty-four hours striking improvement had occurred.

On the third day a complete spinal subarachnoid block developed and the intrathecal administration of penicillin was discontinued. On the fifth day there was a sudden rise in temperature, and the patient lapsed into coma. Cisternal tap revealed fluid that was still heavily infected with pneumococci. Penicillin was then administered intrathecally by way of the cisterna magna until the block disappeared seven days later. The patient eventually made a complete recovery. While still receiving large doses of penicillin, he developed a severe bilateral parotitis for which x-ray therapy was given with good result. Culture of the pus from Stensen's duct revealed a pure growth of *Staph aureus* which was found to be highly resistant to the action of penicillin.

We have recently treated a patient with pneumococcus meningitis who required intrathecal injections of penicillin twice a day for nine weeks before his spinal fluid was permanently sterilized. Other workers have reported similar experiences.

Several patients with pneumococcal endocarditis have now been treated with penicillin. Most of these patients have died, but a few, in whom there was no doubt as to the diagnosis, appear to have recovered. One patient whom we treated has remained well now for more than a year.

The action of penicillin in subacute bacterial endocarditis caused by *Streptococcus viridans* cannot be satisfactorily evaluated at this time. Early experiences were uniformly discouraging,<sup>1</sup> and further study of the problem was postponed until the supply of penicillin became more plentiful. Recent experiences with the use of larger doses of the drug have given immediate results that are encouraging in some, but in by no means all cases of this disease. It seems clear that this problem will require prolonged study before any definite conclusions can be established.

The hemolytic streptococcal infections that have been treated are too few in number and have included too diverse a group of infections to permit statistical evaluation. Results in individual cases indicate that penicillin is an effective agent against this organism.

Penicillin therapy of experimental Welch bacillus infections in animals has been very promising. Only a few human infections have been treated with penicillin, but in some of these cases its use in large doses has appeared to be the chief factor in recovery. It is clear, however, that the thorough removal of necrotic tissue and the use of antitoxin cannot be omitted.

The clear-cut action of penicillin in early syphilis has been reported by Mahoney.<sup>8</sup> It is accepted that no final estimate of the value of penicillin therapy in syphilis can be made until a long period of observation has elapsed.

Interest in the clinical use of penicillin has, of course, centered on its effectiveness in staphylococcal infections. More than 550 patients with staphylococcal bacteremia have been treated with penicillin. Seventy-one per cent of these patients have recovered, giving a mortality rate of 29 per cent. It will be recalled that the overall mortality rate in untreated staphylococcal bacteremia was 85 per cent, and that with sulfonamide therapy the mortality rate remained in excess of 60 per cent. In nearly a thousand cases of serious staphylococcal infections without bacteremia, recovery or improvement has taken place in 81 per cent.

The results of treatment in these 1,500 odd cases leave no doubt that penicillin is a potent agent in the therapy of staphylococcal infections, although there still remains a substantial group in which, for a variety of reasons, therapy is not successful.

In contrast to the small doses and short periods of treatment which are usually adequate in gonococcal, meningococcal, pneumococcal, and hemolytic streptococcal infections, staphylococcal infections have been found to require prolonged and intensive therapy.

*Case 3.*—A 19-year-old girl had a staphylococcal pneumonia with bacteremia and had developed multiple subcutaneous abscesses and a suppurative arthritis of the ankle while receiving sulfamerazine. Treatment with penicillin was begun on the fifth day of her disease. She received a total of 3,500,000 units over the space of twenty-three days, and eventually made a complete recovery. We were especially gratified with the complete resolution of the arthritis without surgical drainage. At the beginning of treatment, 8 cc. of thick pus, which showed a heavy growth of *Staph. aureus*, was aspirated from the joint. Daily aspirations followed by the injection of penicillin were continued for eight days. The joint fluid became sterile, and there was a complete return of function to the ankle. Cultures of the blood and of the joint fluid, however, did not become sterile until after several days of treatment.

*Case 4.*—A 2-year-old child had been severely ill with staphylococcal pneumonia with bacteremia for four days before penicillin was started. Large doses of the sulfonamides were given without improvement. Following the institution of penicillin therapy, defervescence was gradual, but recovery was finally complete. It has been remarked by many observers that in severe staphylococcal infections treated with penicillin, marked subjective and objective improvement in the patient's general condition is very apt to occur before there has been any striking reduction in the temperature.

Penicillin has proved to be a very useful agent in the management of chronic osteomyelitis. Almost all patients who have been treated have been distinctly benefited. In about 75 per cent, all drainage has disappeared and the sinuses have healed. Unfortunately, many have relapsed within a few months. It seems clear that those patients in whom all sequestra are removed will do better than those in whom this procedure is not carried out.

One of the most striking properties of penicillin has been its lack of significant toxicity for the host. Some reactions have been encountered, but none of them was serious. No toxic effects on the liver, kidneys, or blood-forming organs have been observed during the course of penicillin therapy. This lack of toxicity is even more striking when one considers that the preparations available today contain a high percentage of impurities. It might be best, however, to reserve final judgment regarding the harmlessness of penicillin until many more cases have been treated. As yet there is no evidence that patients will develop a sensitivity to penicillin, and at present there are no known contraindications to its use.

In summary, we can say that clinical experience has shown penicillin to be an effective therapeutic agent against a variety of micro-organisms. In many cases the use of penicillin alone will insure recovery from serious infection. In another large group of cases, penicillin should more properly be considered as a valuable adjunct to other established forms of treatment, particularly surgery.

All aspects of penicillin therapy require further study. This is particularly true with regard to the possibilities contained in prophylactic use of penicillin and with regard to the use of penicillin in combination with the sulfonamides.

But while many problems remain to be explored, the experience of the past two years has definitely established the value of penicillin as a therapeutic agent and has also pointed the way for the development of sound principles of penicillin therapy.

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# OTOLARYNGOLOGIC PROBLEMS OF AVIATION

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THE practical interest of the specialist in the diseases of the ear, nose, and throat in aviation medicine has grown with the increasing volume of personnel who fly. In a brief span of years we have come to count aviation personnel in millions instead of in hundreds and thousands. It is not only the pilots but also other members of the airplane crew and the passengers who are exposed to conditions brought about by flying. Although the flight surgeons and medical examiners perform the examinations of the pilots, they see relatively few of the civilian flying personnel who seek treatment or advice either on the occasion of an anticipated flight or because of some ailment following a flight.

To be able to give useful advice to this personnel who consult physicians requires some familiarity with the medical problems encountered in aviation.

## Aerial Equilibration

The flyer when he has lost contact with the ground is no longer subject to the uniform forces of gravity and the fixed points of reference that had enabled him to maintain his equilibrium so easily. He may pilot his airplane through any maneuver without experiencing disturbance of equilibrium so long as he has control of and is aware of the attitude of the airplane. For example, if the pilot flies his plane through the maneuver called a spin, and intentionally pulls out for horizontal flight, there is no evidence of any disturbance of his equilibrium, but as often happens, if the flyer without much experience pulls out of a spin and is unable to control the attitude of the plane, allowing it to drop off into another spin, there is a disturbance of his equilibrium.

In the organization of the functional nervous system, equilibrium is dependent on sensations mediated through the visual, and vestibular and the sensory spinal nervous systems. When any two of these component systems are functionally intact there is no disturbance of equilibrium, or it is so slight as not to interfere with the ability of the pilot to keep the right end of his plane uppermost and to get from place to place. On the other hand, if there is impaired function of any two of these sensory systems there is a manifest disturbance of equilibrium. The common example of this is the disturbance of equilibrium noted when a person who has a disease of the

posterior spinal column attempts to walk in the dark. Such a person has been deprived both of visual aid and of the impulses arising from the skin, muscle, joints, and tendons.

We are familiar with the history of the introduction of tests of the vestibular function in the aviation physical examination, adopted in the first war. The Bárány chair test for after-rotary nystagmus, vertigo, and post-pounding was new, and many claims of its value in the selection of applicants for pilot training have not been borne out by experience. This is not the fault of the vestibular test but of false interpretation of the results. To qualify the applicant had to come within certain arbitrary limits for after-rotary nystagmus time. Experience with aviation personnel, as well as in clinical practice, has demonstrated that the reactions induced by the rotation test have considerable quantitative variations in normal persons. The Bárány chair test never has been required in the examination of civilian flying personnel and at the present time is used only on the initial examination in the Navy. The applicants for flight training are usually healthy young men with good medical histories. Unless there is something brought out in the history or on the comprehensive physical examination to suggest further investigation of the vestibular function, the only tests used are the Romberg test and the test that involves standing on one foot with the eyes closed. If an applicant's performance on these tests is unsatisfactory a more searching examination should be made to learn the cause of his disturbance of equilibrium.

Applicants for flight training who have symptoms of a vestibular disorder in the history or on examination or who have ear disease that is likely to produce a vestibular disturbance are not acceptable.

A foreign stunt pilot, whose acrobatics were the most spectacular that I have ever witnessed, was found on examination to have a postauricular fistula following a simple mastoidectomy. He would swoop down in an outside loop until his head was within three feet of the ground. It would seem hazardous for him to fly because if his chin strap should be loosened, his inner ear might be exposed to a blast of cold air, with disastrous consequences. Patients with a radical mastoidectomy cavity have had dizziness caused by the excitation of the exposed vestibular end organ from no greater stimulus than the air from an electric fan. Applicants with a dry

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perforation of the ear drum will meet the physical standards only for the grade of private pilot. The impossibility, in many cases of dry perforations of the ear drum with cholesteatoma, to make the diagnosis until the patient has been seized with intense vertigo that causes uncontrollable disturbance of equilibrium would make it doubtful that such applicants should be acceptable for any type of license.

Airsickness, like seasickness, does not permit of a satisfactory explanation of its cause. There is considerable evidence, however, to support the opinion that those who suffer from airsickness are persons who do not have such stable nervous systems as those who have a high degree of immunity. Airsickness is relative to certain conditions, depending, as it does, both on the individual's susceptibility to the effects of motions and on the intensity of the sensory stimulation from the angular course taken by the airplane. It may be truthfully said that no one will invariably suffer from airsickness on airplane flights and also that no one has complete immunity to it. The supposition that susceptible individuals have hypersensitive vestibular end organs is not valid because it has been demonstrated that there is no parallel between the reactions to vestibular tests and the susceptibility to airsickness. It may be that those with considerable immunity to airsickness have a relatively greater degree of control, coordination, and even suppression of sensory stimuli in the higher centers of the nervous system. In addition to the psychic factors and the vestibular stimuli, there are to be reckoned with the visual, olfactory, and gastrointestinal stimuli.

Student aviators who experience airsickness are almost invariably those in the early acrobatic training stage. It is common experience that focusing the vision on some object other than the carrier that one is riding in will aid in maintaining equilibrium. Relying on this principle, Flaherty<sup>1</sup> used the following procedure on naval student aviators who complained of airsickness.

These students were instructed by him to carry out the following routine:

1. To adjust the seat to a high position in the plane so that visibility would be at the maximum. Each man was cautioned to be certain that full throw of the rudder paddles was possible after adjusting the seat to this high position.

2. To fasten the safety belt as firmly as possible. This was done in order that the proprioceptive sense would be at its best, as all seat movements would be felt in a firm but smooth manner.

3. To keep the eyes out of the cockpit at all times except for casual glances at the instruments. It was found that practically all stu-

dents had the tendency to "look" the controls through on maneuvers during instructions rather than to "follow" or "feel" the controls through, as they were instructed to do. In "looking" the controls through, their eyes were continually focused in the cockpit, and they had practically no idea of the position of the airplane in relation to the earth. Owing to this fact, it was found that nearly every student felt better when he was either soloing or flying the plane with the instructor present, for on these occasions he was forced to use his vision more in order to keep oriented. The fact that the students felt better while soloing also tends to disprove the often-made statement that airsickness is due to a fear reaction.

4. To pick out some point of reference a long way from the airplane. This is by far the most important instruction given to the student. In executing a loop, a point on the ground should be watched on the initial "nose-over," and after the top of the loop has been reached, a point on the horizon should be selected and the airplane brought down in alignment with this point, additional objects being selected as needed for points of reference. The same procedure was used in an Immelmann turn. In spins, points of reference on the ground should be followed at all times, and the eyes should never be fixed on the nose or the wings of the airplane. This is essential in doing precision spins; otherwise the student has little idea where to begin recovery in order to stop the spin at the desired point. In the performance of "wing-overs" he was advised to do the maneuver relative to a straight stretch of road, fence, line, or similar object whenever possible. It was found that most students who became airsick during this maneuver spent a great deal of time looking in the cockpit at the air-speed meter and the "needle and ball" indicator, thus literally flying mechanically by instruments and never using points of reference on the earth's surface. In snap rolls, a point on the horizon or a cloud bank could be taken as a point of reference. This point can be followed during the maneuver, and the student will know his position throughout the roll.

5. The same type of maneuver should never be tried over and over again because this tends to cause airsickness to a far greater extent than if the maneuvers are varied. The student should also wait a short interval between different acrobatics.

6. Never to attempt to land an airplane if he is extremely airsick. It is much safer to stay at a reasonable altitude until the airsickness has subsided.

Flaherty concluded that "airsickness can ordinarily be overcome when a student becomes

oriented in the air, as by using his eyes to pick up points of reference on the ground."

Relatively few student pilots have to discontinue their flying on account of airsickness, although many experience it in some stage of their training. It is not considered safe for a pilot to take drugs in the attempt to relieve himself of airsickness, but the doctor may use the same favorite prescription that he has given passengers for seasickness, and without expecting any more favorable results. Bromides and barbiturates have been used with indifferent success. Atropine in large doses is probably the most efficacious drug. Passengers who have planned a flight, especially if they suffer from airsickness, should avoid constipation and excesses in alcoholic beverages, and should have a good night's sleep before a trip.

### Auditory Acuity in Aviation

The faculty to hear well is useful to the aviator in many respects. Hearing defects may be responsible for propeller accidents which if not always fatal, are severe. Many flyers who have not had their attention directed to the revolving propeller have met with such accidents. This hazard is increased by impaired hearing because the slowly revolving propeller, when the motor is idling, makes little noise. Operations at night on aircraft carriers and to some extent in airfields in certain war areas are carried on without lights. When the airplanes are closely assembled the pilot may have to crawl along the deck in the dark to find his airplane in the midst of many idling motors, and an acute sense of hearing is of great assistance. In flight the pilot's detection of early signs of motor failure or of structural damage to the airplane has saved many from crashes.

The common use of radio in connection with almost all types of flying today requires that aviators have sufficient hearing to use their radios to the best advantage. Amplification of the message being received is not always possible, and, if it were, the static in the presence of interference would also be made louder. When the visibility is poor, flying is done largely on the radio beams. It is essential that the aviator have in his hearing no tone gaps that correspond with the frequency used on the beams.

### Case Reports

**Case 1**—An airline pilot was found on his routine physical examination to have a slight loss of hearing for the whispered voice. He was 32 years of age and had been flying for twelve years. During the first three years most of his flying had been in open cockpit airplanes.

The loss of hearing for the tones 4096 and 8191

TABLE 1—SOUND INTENSITIES IN DIFFERENT TYPES OF AIRCRAFT AND THOSE FROM OTHER FAMILIAR SOUND SOURCES<sup>1</sup>

Energy Units	Decibels	Examples
10,000 000 000 000	130	Airplane noise—pilot's head out in slip stream (threshold of painful sound)
1,000 000 000 000	120	Artillery gunfire
100 000 000 000	110	Airplane noise—open cockpit
10 000 000 000	100	Airplane noise—closed cockpit
1 000 000 000	90	Automobile horn
100 000 000	80	Airplane noise—soundproofed cabin
10 000 000	70	Stenographic room
1 000 000	60	Airplane noise—ultra modern soundproofed cabin
100 000	50	Ordinary conversation
10 000	40	Average residence
1 000	30	Slight rustling of leaves
100	20	Whisper
10	10	One's own heartbeat
1	0	Absolute stillness

was not considered disqualifying because the frequencies of the radio beams are between 200 and 400 kilocycles.

Although good hearing in an aviator is desirable, impairment of hearing may be one of the hazards incident to his occupation. The loss of considerable hearing in aviators is not very common, but it occurs at times as it does in others who work in the midst of loud noises. Otolologists have seen patients whose deafness was attributed to being exposed over a long period of time to loud noises and also some who were exposed to an abrupt, intense noise of short duration. Those aviators that develop deafness have a greater loss for the high pitch tones and a shortened bone conduction which is similar in type to the deafness found in any other workers who are exposed to noises of great intensity.

**Case 2**—A racing pilot, aged 28, was aware of a gross loss of hearing in both ears immediately after a race in which he had been a contestant in an open cockpit airplane. On examination five years later the drums appeared to be normal, and there was nothing in the history to indicate that his drums had been ruptured or that there had been an infection. He believed that there had been a slight improvement in his hearing since the time of the damage to his ears.

The audiogram showed a loss of hearing by air conduction of between 40 and 50 decibels in each ear for the tones 64, 128, 256, 512, and 1024, with comparable loss in bone conduction. There was complete loss of hearing for the upper tones.

The intense noises produced by the propeller, motor, and the slip stream that pilots were exposed to in the past have been greatly lessened by the cabin type of airplane and by soundproofing. The following table of sound intensities illustrates how effective soundproofing of aircraft has become.

Although soundproofing has to a great extent

TABLE 2.—COMPARATIVE VOLUMES OF THE GASTRO-INTESTINAL GASES AT VARIOUS ALTITUDES<sup>2</sup>

Altitude	Atmospheric Pressure	Gas Volume
0 feet	760 mm. Hg	1.0
8,000 feet	564 mm. Hg	1.5
18,000 feet	380 mm. Hg	2.0
27,000 feet	258 mm. Hg	3.0
34,000 feet	187 mm. Hg	4.0
40,000 feet	141 mm. Hg	5.5

removed the noise hazard for many who fly, the military aviator is not so well protected. He still has to rely on plugging his ears with cotton, which should reduce the noise level to about one-half of its intensity. Molded wax to fit the ear canal and rubber plugs are more effective than cotton. They, however, are uncomfortable and not always so accessible as cotton. When radio reception is required the most satisfactory results are obtained from using a radio headset with earphones in the earflaps of the helmet which are so constructed as to cup the external ear. The exposure to all of the sounds that come over the radio by an earpiece so close-fitting that it prevents any escape of noises will be more likely to damage the hearing than the noises from the propeller and motor. The hearing defect is comparable to that found in telephone operators. It has been suggested that the radio operator use single receptors as the telephone operator does, so that possible damage to his hearing will be limited to one ear. A unilateral radio receptor also would leave an ear free to receive oral messages from members of the crew.

### Conditions Altered in the Sinuses and Middle Ear By Altitude, By Ascent, and By Descent

Being bony cavities, the air spaces of the skull, represented by the nasal accessory sinuses and the middle ears, do not lend themselves to a satisfactory increase or decrease in size to avoid the ill-effects to the expansion and contraction of the air that they contain as a result of the changes in atmospheric pressures. Therefore, a free exchange of air in the sinuses through their openings into the nose and of the air in the middle ear through the eustachian tube is essential to the aviator's well-being. Table 2, showing the approximate values enables one to readily understand the importance of this free exchange of air if damage to the ears and sinuses is to be prevented.

It should be borne in mind that it is not the variation in the pressure and the gas volume or its composition in themselves that cause ill-effects on the body but simply the inequality of the pressure effects existing between the air in the sinuses and the middle ears and that of their surroundings. As to the composition of

air, it remains essentially constant up to 70,000 feet. As you will probably reason, these effects of atmospheric pressure changes on the occupants occur more frequently in descent since descent is relatively faster than ascent. Although this is true in general, the amazing speed of some military aircraft enables such a rapid ascent that the pilot suffers from aeroembolism. The ill-effects on the middle ear and sinuses in ascent have been few as compared with those in descent. The cause might well be that the form of the eustachian tube permits egress of air from the middle ear more readily in ascent than it does the ingress of air to compensate for the decreasing volume of air on descent.

The fact remains that increasing the barometric pressure, whether on descending in an airplane or in a low-pressure chamber, frequently causes ear symptoms and occasionally causes symptoms referable to the sinuses, particularly the frontal sinus. Gemmill<sup>3</sup> reports the following observations on student aviators taking the low-pressure chamber tests:

"The question of earache is a very important one in low-pressure chamber work. Three hundred and five of the 2,521 students complained of earache on these runs. In that group there were only two who had earache on ascent. A preliminary drop of 3,000 feet is made following the ascent of 5,000 feet in order to ascertain if the man can stand descent. This test does produce a few earaches, and the individuals who suffer from these pains are removed from the chamber. The majority of earaches occur at from 17,000 to 14,000 feet on descent. This indicates that an 11,000 foot drop is necessary to elicit pain. One individual did complain of pain at 22,000 feet on the descent. The cure for earache is to stop the run and to ascend 1,000 feet. One method of prevention is the elimination of those who have had recent colds, sinus infection, and sore throats. A quick examination is made of the persons who give a history of any of these conditions. Another method of prevention is to instruct the men in the chamber to stretch their jaw muscles every 400 feet on the descent. No permanent damage was ever observed. Forty-two men had sinus pains. These pains were all frontal sinus pains and all occurred on descent. The onset is generally sudden. In a few cases the pain was very severe. The best method of relief is a quick ascent of 1,000 or more feet. Sixteen complaints of toothache were received. All of these cases were sent to the dental department for examination. Several abscesses were discovered and the infected teeth were removed."

The ear symptoms do not appear to depend so much on the rapidity of the increasing of the

atmospheric pressure as they do on which means are used to equalize the pressure on the inner side of the drum membrane with that of the outer side. When this equalization of pressure is not maintained it results in the complaint of ear fullness, buzzing in the ears, deafness and pain in varying intensity. Inexperienced flying personnel, either as pilots, airplane crew or passengers, are more liable to these ear symptoms because of their lack of familiarity with the means to avoid them. The experienced have learned that relief at the earliest feeling of fullness in the ears usually can be accomplished through yawning, swallowing, moving the lower jaw horizontally with the mouth open or by holding the nostrils closed and increasing air pressure in the nasopharynx. The Valsalva technique may not be effective if it is not begun until after the symptoms of tubal obstruction have passed the mild stage.

Failure to be able to ventilate the middle ear adequately results in observable changes in the ear drum membrane. These variations from the normal may be simply a retraction of the drum and a redness along the handle of the malleus, with mild sensations ranging from a mild degree of stuffiness to that of severe pain when the drum is red and bulging. Even if a drum membrane is fiery red and bulging following a flight, it is unwise to do a myringotomy, unless there is other evidence of infection, because of the dangers of introducing an infection by the treatment prescribed. Even extravasation of blood into the external canal does not alone warrant the diagnosis of a ruptured ear drum.

Schilling and Everly<sup>4</sup> in a comprehensive report on their observations on personnel examined after low pressure tank tests stated: "blood has been noted coming from the external canal or from an eustachian tube and upon examination no complete perforation could be demonstrated." It appears that bleeding may occur within the drum membrane which may rupture internally into the middle ear or externally in the canal without producing a perforation. In a report, Silberstein<sup>5</sup> cited 12 cases of hemorrhages into the tympanum in caisson workers without mentioning a single case of complete rupture of the drum.

The foregoing observations are important because we have relied to a great extent on the appearance of the ear drum as an indication for myringotomy, and also we have considered the presence of a bloody exudate in the external canal, along with redness of the drum membrane, the result of a complete rupture of the drum.

An illustrative case is that of a hostess on an airliner whom I saw two weeks after the ear injury. She gave the following history. On her first flight, on ascent to about 3 000 feet she ex-

perienced severe pain and deafness in her left ear. After landing, she consulted a doctor, who opened the ear drum. Following the operation there was a slight bloody drainage for a few hours. Two weeks later, on examination, the ear drum appeared to be normal, and the hearing was normal.

It is doubtful that the treatment carried out was helpful. Moreover, she was fortunate to escape an ear infection following the myringotomy. Conservative methods in the care of such ear conditions are the most helpful. If the patient cannot inflate his ears easily by the Valsalva method it does not appear advisable to attempt to inflate them through a catheter. When there is an upper respiratory infection, no attempt should be made by any method to inflate the ears, but active treatment of the infection should be carried out. Only a few, if any of us I am sure are in agreement with Poppen's statement<sup>6</sup> that there is little danger of infecting the ears by inflation with the Valsalva technique when one has an acute upper respiratory infection. If there is blood in the external ear canal, irrigations should not be done because of the danger of causing a middle ear infection if the drum is completely ruptured. The symptoms, including the impairment of hearing, usually subside within a few days unless infection develops in the ears.

Damage to the ears occurs more frequently in passengers than in aviation personnel who fly more frequently. This may be attributed to the exclusion on the aviation physical examination of those who have infections of the upper respiratory tract or obstruction from deflection of the nasal septum, polyps, or adenoids, and, also, the ability, learned through experience, to prevent any considerable inequality of pressure on the outer or inner side of the drum. In addition, aviation personnel in the services are exposed to the effects of the low pressure chamber tests, and here a few more candidates are eliminated because they cannot effectively maintain an equalization of pressure in the middle ears and sinuses with the surrounding atmospheric pressure.

In the treatment of aviation personnel, one should avoid, as far as is consistent with good practice, administering drugs that in themselves might render an individual unfit for flying. The sulfonamide group of drugs may occasionally cause mental confusion, impaired sensory perceptions, coordination defects, and other insidious manifestations. Army, Navy, and civilian airlines issue instructions that not only pilots but also other members of airplane crews should be grounded for a period of from two days to six days after the last administration of a sulfonamide drug.

Even pilots of long experience are liable to develop what is called "staleness" by the flight surgeons. This condition is characterized by some of the following symptoms: lack of enthusiasm for flying, lassitude, loss of appetite, slight headaches, sleeplessness, irritability, distractibility, nervousness, and a rapid pulse. Before attributing these symptoms to excessive flying, worries, or instability of the nervous system, a searching physical examination is made, particularly for foci of infection in the sinuses, throat, or teeth.\*

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### Discussion

Dr. L. H. Bauer, *Hempstead, New York*—Captain Northington has given an excellent summary of the situation in regard to aviation and the ear, nose, and throat. It is unfortunate that he could not be here to take part in this discussion himself.

The Bárány tests, as Captain Northington indicated, have been discarded except for a very limited use. This has been for two reasons—first, because the Bárány tests give us a poor guide for selecting flyers, and, second, because the labyrinth itself is not the most important factor in maintaining the equilibrium of the pilot. The pilot depends largely on his vision for maintaining his equilibrium. When he is flying blind, he cannot maintain his ship

\* "The opinions or assertions contained herein are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large." (Art. 113 (2), U.S. Navy Regulations)

level unless he has been trained to fly by instruments and to disregard the sensations received from his labyrinths. In other words, the labyrinth, after stimulation, gives one false information. For example, it is well known that after being spun to the right and the spinning is stopped, one has a sensation of spinning to the left, unless he can correct this false sensation by his vision. Unless a pilot is trained to fly by instruments, this false sensation from his labyrinths will get him into trouble.

While I agree with Captain Northington that students are less apt to become airsick when soloing, I believe the reason is not so much a question of the presence or absence of fear but rather that the student is so busy flying the ship that he does not have time to think about himself.

Too much emphasis cannot be laid on the dangers of high-altitude flying for those who have blocked eustachian tubes or blocked openings from their sinuses because of congestion. The expansion of gases in the sinuses at high altitudes may cause terrific pain and ruptured ear drums may result on descent unless the pressure can be equalized on both sides of the drums.

The transportation at high altitude by airplane ambulance of patients suffering from sinusitis or middle ear disease is inadvisable, just as those patients with pneumothorax or those who have had recent ventriculography done should not be so transported.

As a whole, the ear, while important in flying, does not hold the place in aviation medicine that otologists tried to make for it during the first World War. Then otologists claimed not only that equilibrium was an ear problem but also that flying was strictly an ear problem. Now we consider neither to be the case. Equilibrium is a function of the whole proprioceptive mechanism, of which the labyrinth is only one part and, in the flyer, not the most important part. Flying is a complex problem in which the ear plays a definite but a lesser role than it was formerly thought to play.

### MEXICO TAKES STEPS TO SUPERVISE DOMESTIC PENICILLIN PRODUCTION

Mexico, which has just acquired three and a half billion units of penicillin from the United States, is taking energetic measures to stimulate and control the production of the versatile new drug in her country. A National Commission for the Control of Penicillin has been organized under government auspices to supervise research and production of the drug and to ensure its most effective use here and its distribution to United Nations fighting men on many fronts.

The three and a half billion units of penicillin were purchased in the United States by the Mexican Department of Public Health for \$140,000, and represent from 3,000 to 6,000 doses, approximately. Part of the supply will be distributed to hospitals in this country, and the remainder will be placed on sale at from \$30 to \$40 per 100,000 units. Penicillin is normally quoted at about \$90 per 100,000 units.

The National Commission for the Control of Penicillin was created at the beginning of this year to serve as an advisory body in recommending the use of the drug and distributing it where needed.

It also serves as a liaison agency with similar commissions in the United States and other American republics. One of its chief objectives at present is to conduct research on types of ailments which are susceptible to successful treatment by penicillin, and research on new and more efficient means of producing the drug in quantities large enough to bring it within the reach of all who need it. The Commission is composed of Dr. Ignacio Gonzalez Guzman, Dr. Jose Zozaya, and Dr. Demetrio Mayoral Pardo.

At present, four laboratories are engaged in producing penicillin in Mexico, and another one, affiliated with a large United States pharmaceutical company, is being planned. Of the four existing laboratories, one is supervised by Mexican experts, another by United States technicians, and the remaining two are still in the process of perfecting their product. All of these laboratories are planning expansion soon for a possible production of several million units of penicillin a day.—*Release from the Office of the Coordinator of Inter-American Affairs*



## DERMATOLOGIC DISEASES FREQUENTLY ENCOUNTERED BY OTOLARYNGOLOGISTS

A BENSON CANNON, M D, New York City

I AM pleased to have this opportunity of relating our experiences with some of the more usual lesions involving the oral cavity. Inspection of the mucous membranes of the mouth, which is a part of every physician's examination, necessarily brings to light many abnormalities which might otherwise go undetected. While most such abnormalities are of a minor order, such as irritations from a variety of local causes, drugs, vitamin deficiencies, lichen planus, or leukoplakia, sometimes the disease is a more serious one, such as carcinoma, syphilis, pemphigus, or the like.

We are consulted almost daily by patients with stomatitis, they usually complain of a sensation of burning, itching, pricking of some part—or the whole—of the mucous membrane, or, again, patients may complain of painful sores in the mouth which interfere with proper mastication.

Frequent symptoms involving the vermilion border of the lip are those of redness, swelling, crustiness, and itching, or even pain. In such cases, we almost invariably search for a local irritant as the cause of the trouble, if the patient is a woman, we first eliminate her lipstick. But the trouble may be due to one of many other irritants, such as dentifrices, mouthwashes, orange peel, salads, perfume in a facial cream or powder, all these are considered and patch tests are made in an endeavor to find the specific cause of the cheilitis. We sometimes see cheilitis in young men who are nervous or mentally unstable and who have the habit of constantly biting the lips and moistening them with the tongue. Long irritation from either or both causes invariably leads to a hypertrophy of the lips accompanied by excess glandular activity which results in crusting and exfoliation. Sometimes when the crust is removed a red, denuded, and slightly painful surface is left. This may prove very troublesome. Little can be accomplished by local treatment other than to keep the parts soothed and to prevent infection. The greatest improvement or cure must necessarily be from psychiatric treatment.

For cheilitis due to other causes we prescribe warm, soothing applications of boric acid, saline, bran, or cornstarch, and in the intervals have the

patient use a soothing protective covering such as albolene, zinc oxide ointment, or Lassar's paste. Usually on removal of the source of the irritation, the improvement is immediate.

Red patches on the mucous membrane, sometimes with superficial central erosions accompanied by burning and pain and usually associated with swelling of the affected parts, should arouse our suspicion of a mouthwash or a gargle such as sodium perborate, dentifrices, a faulty dental plate, or the substance used to cleanse the plate.

Of the eruptions on the mucous membranes caused by drugs, the most commonly seen—by far—is from phenolphthalein. This drug should be remembered as one of the ingredients in a great number of laxatives on the market, it is also contained in certain chewing gums and is to be found as a coloring matter in some dentifrices.

The characteristic lesion from phenolphthalein is a red, swollen erosion or ulcer which may vary from pea-size to a lesion involving the whole side of the cheek or gums. Such lesions are sometimes mistaken for Vincent's angina, pernicious anemia, or are attributed to an avitaminosis.

### Case Reports

Case 1—Mrs. G. B., aged 57, consulted me on June 4, 1942, complaining of an ulcerated, swollen, and painful condition of the gums of the upper jaw and the adjacent side of the cheek of two years' duration. She had seen many physicians in various cities and several dentists, the diagnosis having been made, first, of Vincent's angina, based on the demonstration of Vincent's organisms and also of numerous staphylococci and streptococci. She failed to respond to treatment with antiseptics, including sulfanilamide powder. Four other physicians made a diagnosis of vitamin deficiency and she was put on large doses of vitamin C and B complex and given liver extract concentrate by hypodermic every other day, and twice weekly an injection of staphylococcus and streptococcus vaccine intramuscularly. The patient showed no improvement after being on the above treatment for one month. Treatment was then changed to weekly injections of 0.06 Gm. of mapharsen intravenously. This improved the condition more than anything else.

In June, 1941, the swelling and ulceration of the gums had spread to both sides of the mouth and were very much more extensive, involving the space between the gums and the cheek. Thorough examination of the patient, both physically and from a laboratory standpoint, numerous skin tests for allergy, and physical and neurologic examinations,

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were made, with negative results. A dentist then made a diagnosis of desquamative gingivitis. He prescribed salt solution. The patient was then sent to a large diagnostic institute where after thorough investigation she was told that her condition was probably an avitaminosis and she was put on large doses of vitamin C, nicotinic acid, and histaminase, which had no effect upon her condition. After three weeks of this treatment, including high vitamin diet, she was advised to have all her teeth extracted. Two teeth were removed before the dentist remarked that her teeth were perfectly sound and in remarkably good condition and advised against the removal of more. The patient was fairly healthy and strong and showed no signs of constitutional disease other than the mouth condition. She then was given an autogenous vaccine of streptococci and staphylococci in large doses, the dose at each injection being increased every four days. She also used sodium perborate alternating with nearsphenamine powder. The patient improved somewhat on this treatment but had relapses.

Examination disclosed a well-developed and well-nourished healthy-looking woman, not apparently ill. The gums, more especially on the left side along the molars, and the intervening spaces between the gums and cheeks were swollen, dark red, spongy, ulcerated, quite painful to touch, and bled easily on motion. The teeth were unusually good, clean, and sound in appearance. A diagnosis of drug eruption—phenolphthalein—was made. The patient readily admitted having taken alophen pills every night for severe constipation for at least six years. The drug was stopped, the patient was given a saline irrigation of the mucous membrane of the oral cavity, the affected parts were painted with 15 per cent argyrol for a few days, and a suitable diet was prescribed for the constipation: forced fluids and some milk of magnesia or cascara. The improvement was immediate and within two months her mouth was cleared.

Not many weeks ago, I was asked to see a 64-year-old patient in consultation at one of our large hospitals. She had painful sores studded over the mucous membranes of the mouth, hard palate, and tongue, these varying in size from that of a large pea to that of a dime. They were deep red and eroding in the center, the color fading at the margins. She had had the sores for several months; they would improve and then recur. She was under treatment for a secondary anemia. Again we suspected a phenolphthalein condition, but the attending physician said the patient had been in the ward for six weeks and had had no phenolphthalein—only such medication as the doctors there had prescribed. But upon examining her chart, we discovered that the patient had had an alophen pill (containing phenolphthalein) under the doctor's orders every night since her admittance.

Sometimes luminal causes lesions of the mucous membranes of the mouth, usually of the bullous

erythema multiforma type. Only a few lesions are present and when the bullae have ruptured, the swollen, red, and denuded areas may resemble a phenolphthalein eruption, as may also the bluish-brown pigmented macular areas on the body.

There is a growing tendency among physicians to ascribe every variety of mucous membrane lesion to vitamin deficiency. Undoubtedly, avitaminosis is very commonly expressed in change in the mucous membranes of the mouth; namely, a change in color (erythematous patches of orange-red to deep bluish-red), fissuring at the corners of the mouth and split papules at the angles of the mouth, scaling of the skin of the lips and surrounding parts somewhat suggestive of monilial infection, redness and desquamation, atrophy and leukoplakia of the tongue. Oftentimes such individuals are below par physically, tire easily, have a secondary anemia, or actually suffer from some constitutional disease.

Gross<sup>1</sup> calls attention to atrophy of the mucous membrane of the mouth and pharynx, and more clearly on the tongue which, in typical cases, is completely smooth, owing to avitaminosis. I have seen so-called experts in vitamin study show slides with tongue lesions typical of syphilis (such as leukoplakia, atrophy, scarring, and interstitial glossitis) as examples of avitaminosis. I also have seen many drug eruptions on the mucous membranes of the mouth and lichen planus—both treated for months as avitaminosis.

Lichen planus is a fairly common skin disease, and, in addition to the cutaneous lesions, the mucous membranes also are usually involved, or it may be present only in the oral cavity. The lips, the mucous membranes of the cheeks and tongue, and sometimes the hard palate are affected. Characteristically, these lesions appear white, lacy, annular and linear, and slightly raised, somewhat resembling leukoplakia—sometimes superficial, eroded, and ulcerated lesions appear which are sometimes suspected of being syphilitic, tubercular, or carcinomatous. Lichen planus of the oral cavity is more resistant to treatment than are the skin lesions, but if the lesions are cauterized every five to seven days with 25 per cent silver nitrate or with an acid, in addition to the systemic treatment with mercury or arsenic, they will invariably disappear within from six to eight weeks. I think it important that one remove all foci of infection and build up the patient's general health. We recognize the typical lichen planus, clinically and histologically, involving the mucous membrane of the oral cavity and lips as well as cutaneous surfaces, following arsphenamine injections. This type responds to the elimination of arsenic from the system (Fig. 1).



FIG. 1. Lichen planus ulcer of the tongue, simulating carcinoma.

Leukoplakia is another of the conditions more frequently found on the mucous membranes of the oral cavity—more usually on the tongue, the mucous membrane of the cheeks, or on the gums and lips. It is thought to be due to a variety of causes, local as well as constitutional. We recognize the smoker's leukoplakia, which is more apt to occur just inside the corners of the lips and sometimes on the tongue—or the leukoplakia may be due to a dentifrice or to irritation from a tooth, bridgework, or an ill-fitting plate and poor hygiene of the oral cavity. Fig. 2 shows leukoplakia of the lips, cheek, and tongue. The mouth showed a very unsanitary condition, with a marginal gingivitis throughout. The patient was put on monthly dental prophylactic treatment. The lesion of the tongue changed markedly. It has since become very diffuse and more like a fog than a patch. The patient's general health is greatly improved. So little is known of the cause of leukoplakia that dental treatment was administered more for the sake of general hygiene rather than in the hope that it might have a beneficial effect upon the disease. When one removes the cause, oftentimes the lesions will disappear, if they have not become too thickened and verrucous.

I have observed several patients suffering from an extensive leukoplakia of the tongue and mucous membrane of the cheeks associated with atrophy, erythematous patches, and fissures at the corners of the lips, and also associated with leukoplakia and atrophy of the mucous membrane of the labia and vaginal wall, the latter condition known as kraurosis vulva. The patients have had a moderate degree of anemia, complained of tiring easily, and shown negative Wassermann reactions. Improvement has been decided upon the administration of progyon and vitamin B and riboflavin by mouth. It is this type of leu-



FIG. 2. Leukoplakia, improved by oral hygiene.

koplakia, associated with some constitutional conditions, in which one would expect to—and, I believe, does—receive the greatest response with a treatment of suitable diet and vitamins.

Rhoads<sup>2</sup> referred to a Plummer-Vinco syndrome associated with kraurosis vulva as partly due to avitaminosis.

We also recognize leukoplakia as being a symptom of syphilis, in which case it is usually limited to the dorsum and borders of the tongue and cheeks opposite the last two molars, and lips, and associated with scarring and an enlargement of the tongue. These three symptoms give a diagnostic picture of syphilis.

*Case 2.*—Mr. J. R., aged 40, was referred to me in April, 1931, because of a white, thickened, eroded condition of the lip, tongue, and mucous membranes of the mouth of thirteen months' duration (Fig. 3). He denied having venereal disease. He had been married for seventeen years. His wife was living and well. She had three children, ages 9, 11, and 13 years, all well. There had been no other pregnancies. The patient's past and family histories were essentially negative. He had first noticed a small white area in the left corner of his mouth that had gradually spread over both the upper and lower lips, the tongue, and the mucous membranes of the mouth. For several weeks the lower lip on the left side had been much thickened, white, and covered with a hard, thick crust. His general physical examination was essentially normal. His blood pressure was 150/86. There were no cardiac enlargement, no murmurs, accentuations of sounds, nor



FIG. 3. Leukokeratosis of the lips, tongue, and mouth due to syphilis.

irregularity. The abdomen, liver and spleen, pupils, and the deep reflexes of the upper and lower extremities were normal. There was an extensive leukokeratosis of the entire lower lip, which was most marked on the left half. This latter portion was whitish in color, verrucous, greatly thickened, and covered with a thick adherent crust. The mucous membrane of the tongue and cheeks showed an extensive leukoplakia that was verrucous in places. The tongue was large and firm and there were several streaks of atrophy and scarring of the tongue. The patient's blood Wassermann was checked on two different occasions and was strongly positive, both for cholesterin and alcoholic antigens and the Kahn precipitation test. His spinal fluid was negative in all phases.

I gave him five weekly injections of arsphenamine and five muscular injections of mercury salicylate. There was tremendous improvement in the leukoplakia of the mucous membranes of the tongue and cheeks and lips, except for the verrucous leukokeratosis on the left side of the lower lip. This had shown no appreciable change, so that area was removed with the desiccating needle and the patient was then sent back to his physician for continuance of his antisyphilitic treatment. The result of both the operation and the antisyphilitic treatment was excellent.

In untreated leukoplakia, carcinoma is quite likely to appear, particularly if the cause of the lesions is not eliminated. We advocate the removal of every thickened and verrucous leukoplakia with the electric needle as a precaution against carcinoma. It has been my practice to desiccate the leukoplakia areas under a local anesthetic so that the whole mucous membrane will appear raised, white, and soggy. I then take hold of the mucous membrane with a pair of forceps and pull it off in sheets as one would the bark of a tree. This treatment leaves a smooth red surface which granulates over within about two weeks. Sometimes there is a recurrence of a small pea-sized lesion, which I desiccate in the same manner.

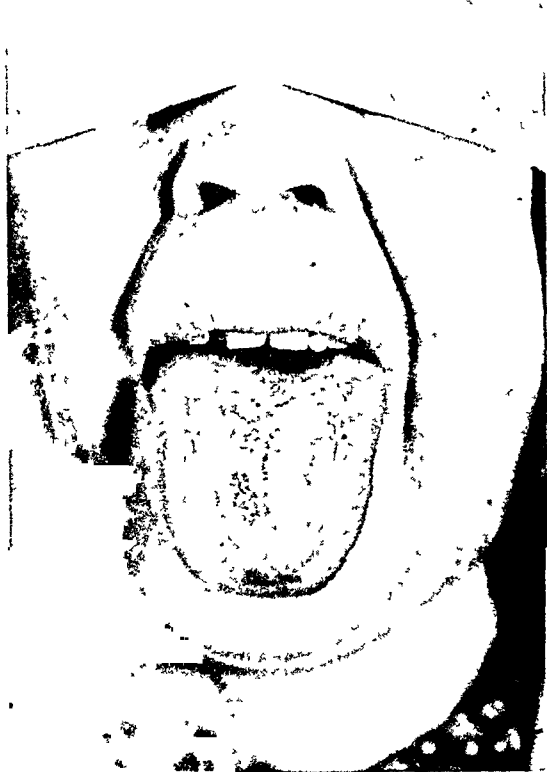


FIG. 4. Extensive leukoplakia with atrophy of the tongue and mucous membranes of the mouth, accompanied by leukoplakia and atrophy of the labiae and vaginal mucous membranes (kraurosis vulvae), successfully treated with vitamins.

Over a period of many years I have successfully treated a number of cases with the above method and I have never seen any secondary untoward results. On the other hand, I have seen two patients develop a rapidly growing carcinoma within a few weeks after having been treated with a suberythema dose of radium.

Whatever the method used for removal of leukoplakia or a leukokeratosis, it should be thorough.

*Case 3.*—Mrs. F. F., aged 50, consulted me on March 10, 1942, complaining of white spots and soreness of the mucous membranes of the mouth and tongue and of the labiae and vagina, of several months' duration. Her past and family histories were essentially negative. She had been married for many years, never pregnant. She had first noticed white spots on the tongue and then a sensation of soreness in the mouth on taking sharp foods. She then developed a leukorrhea. It was quite profuse and annoying. She consulted her physician, who investigated her condition and prescribed alkaline douches and stilbesterol by mouth and injections. Examination to determine the cause of the bloody vaginal discharge was essentially negative except for

the local condition. Stilbesterol was discontinued and the bleeding ceased within ten days. She was then referred to me for the condition of the mucous membranes of her oral cavity and of the vaginal mucous membranes. She had been perfectly well except for moderate secondary anemia and tired easily on exertion. Her general physical and neurologic examinations were otherwise essentially negative, as were also her blood Wassermann, urine analysis, and blood chemistry. The basal metabolism was reported to be within normal limits.

The mucous membranes were found to be milky white, as though they had been painted with silver nitrate solution. There were many streaks that were faintly raised and in the involved spaces were desquamation of the epithelia of the mucous membranes of the cheeks and tongue, giving a smooth shiny, atrophic appearance. There was also an extensive leukoplakia involving the mucous membranes of the labiae and vaginal wall, associated with a smooth, shiny, yellowish red condition of the vaginal mucous membrane, studded here and there with a few bright-red, pea sized spots. The condition appeared atrophic (Fig. 4).

She was then given crude liver injections, 2 cc twice a week, riboflavin to take by mouth, 15 mg three times a day for three days, after which 3 mg were given three times a day and vitamin B complex to take by mouth, beginning with 6 mg a day and gradually decreasing to 3 mg a day. There was gradual pronounced improvement in the mucous membranes of both the mouth and vagina. The discharge entirely ceased and the white leukoplakia like condition disappeared, leaving only red atrophic mucous membranes. The patient generally feels greatly improved. She has gone for six and one-half months without any symptoms.

#### Diagnosis Leukoplakia kraurosis vulvae

Favorable results in the treatment of leukoplakia by the use of vitamin B have been recorded. An interesting discussion of the matter was given by Martin and Rhoads<sup>3</sup> in *Cancer Research*.

We know that syphilis nearly always involves the mucous membranes in the secondary stage of the disease and oftentimes in the tertiary stage. The extragenital lesion of syphilis is probably more often found on the lips than any other place, though it may occur on the tonsil, tongue, or gum. We should always be suspicious of a hard, raised lump of recent origin involving any part of the oral cavity, and should the lymph gland draining the affected area become swollen, we can be fairly confident of a diagnosis of chancre. I believe it rarely occurs that a physician other than a syphilologist recognizes an extragenital chancre until a secondary eruption appears and makes him suspect syphilis. Secondary syphilis in the form of mucous patches over the membrane of the oral cavity is to be found in the great majority of cases. Sometimes there are

only fissuring or split papules at the corners of the lips or a sharply limited erythema of the pharynx extending across the soft palate, or, again, the patient may have very large tonsils which almost meet across the posterior walls of the pharynx. This is often diagnosed as a follicular tonsillitis.

These primary and secondary lesions usually contain spirochetes in great numbers and, consequently, may be a great menace to the examining physician and to others with whom the patient may come in intimate contact.

Gumma may involve any portion of the oral cavity, but we probably see more cases of the hard palate than of any other location. Usually the gumma begins as a localized swelling and redness, gradually breaking down in the center, forming a deep ulcer with necrosis of the hard and soft palate and perforation into the nasal septum. An enormous amount of destruction of tissue may take place within a few hours to a few days, so it is imperative that an early diagnosis be made and treatment begun as quickly as possible.

A few years ago an otolaryngologist referred to me a patient who had a gumma of the hard and soft palate with a small perforation, the latter having developed overnight. The physician had observed this patient for over a year and had treated him for several attacks of redness and swelling. He had taken a specimen of the tissue for biopsy study, the pathologist reported a probable tuberculosis. The patient's blood Wassermann had been reported negative. The patient was sent to Saranac Lake for six months, returning to New York with complete recovery. A few months later, he had a recurrence of the same swelling, so the physician gave a light treatment to the swollen area, and it was on the next day that I was asked to see him for the perforation.

A

became 4+ twenty four hours after an injection of arsphenamine. The ulcer healed rapidly under antisyphilitic treatment leaving only a hole in the hard palate about the size of a lead-pencil rubber.

A patient with gumma involving the posterior wall of the larynx called me on the telephone a short while ago, stating that his otolaryngologist had made a diagnosis of probable carcinoma. He said that several Wassermann tests done by laboratories had been negative, but as I had treated him for syphilis some eight years previously, he would like my opinion. The patient did have two gummatous lesions, one just above the other, the upper one being about the size of a 25 cent piece and the lower one-half that size. I removed a piece of the tissue with a Coakley punch for histologic study, took blood for a Wassermann, and gave the patient an injection of



FIG. 5. Lip treated with radium for carcinoma, followed by sloughing. Note leukoplakia and atrophy of tongue.

arsphenamine. Twenty-four hours later, both ulcerations were noticeably improved. The first blood Wassermann gave a negative reaction, while a second one taken twenty-four hours after the arsphenamine injection was 4+.

I have made it a rule to take a section for biopsy from all suspected cases of gumma, and if there is no evidence of carcinoma I give the patient a provocative dose of arsphenaminé.

Gumma of the tongue is relatively rare, but as a rule it is not difficult to diagnose, in that the tongue is usually swollen and red, with deep sinuses and sloughing. There is very little or no hardness around the lesions and they are usually not painful. The patient usually has other evidences of syphilis, such as scarring or leukoplakia, a history of syphilis, and often a positive Wassermann test.

There was a patient admitted to the City Hospital two years ago who had received two radium treatments at one of our large New York cancer hospitals for a diagnosed carcinoma of the lip. There was enormous swelling and ulceration following the treatment and the patient was told that this was the reaction to be expected and to return for another radium treatment. Meanwhile, a great part of his lip had sloughed away. There was no evidence of a burn and the lesion did look like a gumma. His blood Wassermann was returned moderately positive, becoming strongly positive after the first arsphenamine injection. The lesion healed rapidly under anti-syphilitic treatment. It was probably the leuko-keratosis associated with the gummatous lesion which made the diagnosis of epithelioma seem the correct one. Had the physician examined the



FIG. 6. Carcinoma of the tongue simulating gumma. Note leukoplakia and scarring and glossitis characteristic of syphilitic infection.

patient's tongue, he would have seen unmistakable evidence of syphilis—leukoplakia, scarring, and interstitial glossitis (Fig. 5).

Carcinoma of the oral cavity is of comparatively frequent occurrence in dermatologic practice. The squamous cell epithelioma of the lip is more frequently encountered, especially of the lower lip, although we see carcinoma of the tongue, tonsils, and gums occasionally during the course of a year. All squamous cell epitheliomas of the mucous membranes can usually be attributed to some irritation of long standing—the pipe-smokers' epithelioma of the lip, keratoses of the lip arising from irritation from sunburn or from chapped lips, leukoplakias, the epithelioma of the tongue or side of the cheek from irritation from a ragged tooth. Occasionally the gums may be the site of a carcinoma from an ill-fitting plate. The tongue with leukoplakia, atrophy and glossitis as a result of syphilis is not infrequently the site of carcinoma that is almost invariably mistakenly diagnosed and treated as gumma until the carcinoma has metastasized. I have made it a practice in such cases of syphilis of the tongue accompanied by a strong plus Wassermann reaction to take a section for biopsy before giving any syphilitic treatment (Fig. 6).

*Case 4.*—Mrs. H. E. D., aged 47, was seen in consultation with a physician on May 8, 1942, complaining of a painful ulceration on the right side of the tongue of five months' duration. Her family and

past histories were essentially negative. She had been married for twenty two years but had never been pregnant. The lesion began as a small pea-sized white spot on the right border of the tongue about two inches back of the tip and gradually increased in size, becoming ulcerated and painful about three weeks after onset. The affected side of the tongue became increasingly swollen, painful, and ulcerated, so that during the preceding three or four weeks she has been unable to rest without taking sedatives, has lost considerable sleep, was unable to open her mouth wide, and the soreness and pain had been so great as to prevent proper mastication of food. She felt ravenously hungry but could not eat. Even during sleep, if her tongue fell to the right side of her mouth, the pain of the tongue resting against her teeth awakened her. She also felt a soreness in all of her teeth and in her right jaw. Diagnosis was made as probably Vincent's angina, and antiseptic mouth washes and gentian violet were used. After two months she was unable to protrude the tongue because of a pulley like band underneath. She had lost 5 pounds in weight in the preceding month, which she thought was caused by being unable to eat.

Examination revealed a well-developed and fairly well nourished woman, not acutely ill with an anxious expression, but apparently in no acute pain. Her general physical and neurologic examinations were essentially negative, as were also her routine blood count, Wassermann tests, and urine analysis. The ulceration on the tongue involving the right border measured  $5\frac{1}{2}$  by  $2\frac{1}{2}$  cm and extended downward beneath the tongue on the edge of the floor of the mouth and forward to and along the frenum of the tongue to within about  $3\frac{1}{2}$  cm of the tip. The base of the ulceration was irregular, with islands of split-pea sized, red, granular, and bleeding points, and between these a sloughing base. The borders were sharply defined, elevated, and hard. The right submaxillary gland was the size of a hazelnut, hard, not tender, and freely movable. The tongue could not be protruded nor could she open the mouth for more than about  $1\frac{1}{2}$  inches. Biopsy showed squamous cell carcinoma.

Diagnosis: carcinoma of the tongue with metastasis.

The patient was referred to the surgical department of one of our large hospitals, where she was given radium treatment to the tongue and deep roentgen ray therapy to the glands of the neck and beneath the jaw. She died on April 11, 1943, with general carcinomatosis.

While some carcinomas of the mucous membranes are more malignant than others—due to the type of growth, the age of the patient, or whether or not it has formed within scarred tissue—they all necessarily have a grave prognosis and should be treated only by a physician or surgeon skilled in dealing with new growths.

Dr. Douglas Quick<sup>4</sup> stated that while radium irradiation represents the backbone of the treatment of the primary growth in the oral cavity,

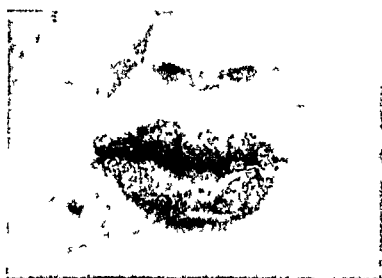


Fig 7 Pemphigus of the lips with ruptured bullae erosion, and crusting of the lips

oftentimes operative surgery is necessary as well as x-ray radiation.

The initial lesion of pemphigus (Fig. 7) is sometimes found in the oral cavity and is considered a sign of rapid and fatal termination. I have known several patients to die within six to eight weeks from the time the first bulla appeared on the mucous membranes of the mouth. Pemphigus is usually not difficult to diagnose, one or more bullae appearing on the mucous membranes and varying in size from that of a dime to one covering the whole cheek and gums, or even the entire oral cavity may be involved. The bullae are very thin and rupture quickly, leaving a raw, bleeding surface with ragged mucous membrane at the edges. The denuded areas are very painful, become necrotic, and emit a foul odor. The pharynx, larynx, and esophagus may become affected. Only liquids can be taken, and those with difficulty. Patients with pemphigus usually have constitutional symptoms of weakness, are easily fatigued, feel ill, and have an anxious, worried expression. Even in the early stages of the disease the sufferers have a feeling of impending danger. Potassium permanganate in tepid solution will keep the parts clean, is soothing, and acts as a deodorant. Physiologic saline is also beneficial when used to irrigate the oral cavity. Pemphigus of the body may not appear until one to several weeks after the mouth lesions. No treatment has proved to be curative. I have recently successfully treated a severe case of pemphigus in a 63-year old man in which the prognosis appeared hopeless, by giving vitamin D and estrogenic hormones. He has been free of all lesions for approximately five months.

Drs. Talbot and Coombs<sup>5</sup> have used saline intravenously and suprarenal cortex hormone with encouraging results.

Alkalis, arsenic, and germanine have all been tried with some benefit.

The patient received 150,000 units of vitamin D three times a day for about nineteen weeks, and 50,000 units of estrogen intramuscularly twice a week for about five times, then changed to stilbesterol by mouth because of the expense of the drug for hypodermic use.

### Summary

The recognition and treatment of some of the commonly seen minor disorders of the oral cavity, such as lesions from local irritants, drugs, vitamin deficiencies, lichen planus, and leukoplakia, and three of the more serious diseases—syphilis, carcinoma, and pemphigus—are discussed.

The local and constitutional causes of leukoplakia are discussed, with the effect on the lesions upon removal of the local irritant responsible for the conditions. A type of leukoplakia was recognized as probably due to vitamin deficiency, and improvement in the lesions was noted following treatment with vitamins.

The removal of verrucous leukoplakias with

the electrical needle is advocated as a precaution against the development of carcinoma.

Early recognition of carcinoma of the oral cavity is discussed, and a biopsy recommended as a means of diagnosis in all cases suspected of being carcinoma.

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### Discussion

Dr. Walter L. Mattick, *Buffalo*—I have enjoyed immensely the paper and the kodachrome reproduction of the various lesions commonly encountered around the nose and oral cavity. The Society is to be congratulated on having had such a rare opportunity.

### DEPARTMENT OF MEDICAL SCIENCES AT BROWN

The establishment of a Department of Medical Sciences at Brown University was announced on July 12 by President Henry M. Wriston. This department will perform a number of important functions within the University and in the relationships of the University to the medical profession and hospitals of the community.

Charles A. McDonald, M.D., and Alex M. Burgess, M.D., physicians connected with the Division of University Health for some time, have been appointed professors of health and hygiene.

Dr. Wriston pointed out that through this department the University will assume a larger responsibility for the general education of its students in matters of health as a requisite of effective accomplishment in college and in after-college years. "It will approach this responsibility in the light of the needs which have been revealed by the war experiences,"

he said. The president went on to say that special attention will also be given to the orientation of students who are planning professional study in the art and science of medicine.

"The Department of Medical Sciences will also offer facilities for advanced study and research," Dr. Wriston said. "This is designed in part to meet the needs and desires of recent graduates of medical schools whose postgraduate studies in certain specialized fields of medical science have been interrupted by war service."

The president stated that opportunities for specialized study will also be available to other interested members of the medical profession. He emphasized that Brown University is also prepared to cooperate in the development of programs of postgraduate study and research for members of the resident staffs of the hospitals of the community.

### "SALIVARY AMYLASE AND DENTAL CARIES"\*

To the Editor [of the *J.A.M.A.*]:—In the May 6 issue of the *Journal* the editorial entitled "Salivary Amylase and Dental Caries" properly emphasizes the significance of the findings that a direct relationship exists between the diastatic activity of saliva and the incidence of dental caries. However, credit for the discovery is misplaced. It should have been given to Florestano, Faber, and James (*J. Am. Dent. A.*, Vol. 28: 1799, Nov., 1941), whose

complete paper on the subject appeared well over two years ago. The editorial does not mention these workers but gives all the credit to Turner and Crane (*Science*, Vol. 99: 262, March 31, 1944), whose preliminary paper was published less than two months ago. Probably the oversight was due to the failure of Turner and Crane to cite the paper by Florestano and his associates. Whatever might be the reason for the error, attention should be called to this correction.—Harry G. Day, Sc.D., *Department of Chemistry, Indiana University, Bloomington, Ind.*, in *J.A.M.A.*, June 17, 1944

\* The original item on this subject was reprinted in this *JOURNAL* in the July 1, 1944, issue, page 1484.



# REINFORCEMENT OF SULFONAMIDE ACTIVITY: EXPERIMENTAL AND CLINICAL OBSERVATIONS

ERWIN R. NETER, M.D., Buffalo

THE greatest and most important step forward in the field of chemotherapy since the pioneer work of Paul Ehrlich (apart from the studies of Fleming on penicillin) is the discovery by Gerhild Domagk of the therapeutic activity of prontosil in experimental streptococcal infections of mice. In man, too, this compound proved to be a reliable chemotherapeutic substance effective in certain microbial infections. Domagk's publication stimulated experimental and clinical research throughout the world in an unparalleled manner. At first, prontosil was believed to be a specific agent effective only in vivo. Later it was established beyond doubt that sulfanilamide is the directly effective compound with bacteriostatic properties both in vivo and in vitro. Certain bacterial infections, however, did not respond to treatment with these drugs. Research, therefore, was primarily directed toward the synthesis of new compounds with a broader range of activity. It is well known that this endeavor was crowned with success. Sulfapyridine, sulfathiazole, sulfadiazine, sulfaguanidine, and sulfasuccidine are the results of these investigations.

There is another method of approach to increasing the effectiveness of sulfonamides—namely, by a suitable change of the environmental conditions and by the combined use of the sulfonamide compounds with other antimicrobial agents. It is proposed to discuss here the pertinent data of these experimental and clinical investigations. The presentation will be concerned with (1) potentiation of sulfonamide activity by other agents which per se do not exert antimicrobial activity and (2) with synergistic effects resulting from the simultaneous use of sulfonamides and compounds which, employed alone, exert bacteriostatic, bactericidal, or antitoxic effects.

## Effect of Temperature on Sulfonamide Activity

In vitro experiments by several investigators, including Wengatz, Boak, and Carpenter,<sup>1</sup> White,<sup>2</sup> Spink,<sup>3</sup> Weld and Mitchell,<sup>4</sup> and Neter,<sup>5</sup> revealed that sulfonamide activity can be markedly enhanced by raising the environmental tem-

perature. With certain micro-organisms the increase in antibacterial activity of sulfonamides is manifold if the temperature is changed from 37 C to 39 C. Even bacterial species which appear to be rather resistant to sulfonamides, such as the enterococcus or streptococcus fecalis, become susceptible at higher temperature (43 C). These experimental observations have been applied to the treatment of man. Belt and Folkenberg,<sup>6</sup> reported, for instance, that 86 per cent of patients with sulfanilamide-resistant gonorrhea were cured by combining chemotherapy and thermotherapy.

## Synergistic Action of Sulfonamides and Immune Serums

The problem of synergism of specific antibodies and chemotherapeutic substances has been the subject of many experimental investigations. In certain instances the combined use of these agents exerts by far greater antimicrobial activity than that of either agent alone. A very thorough series of experiments was carried out by Branham and Rosenthal.<sup>7</sup> These authors studied the effect of serum and sulfanilamide, alone and in combination, in experimental meningococcal infections of mice. The mortality rate of untreated mice was 100 per cent. Treatment with sulfanilamide alone resulted in a death rate of approximately 70 per cent, whereas treatment with serum alone lowered the mortality rate to 90 per cent. On the other hand, combined treatment with both sulfanilamide and serum resulted in recovery of all infected mice. In experimental pneumococcal infections too, the combined treatment with sulfonamides and specific antibodies yielded better results than therapy with one agent alone.

Clinically, the combination of chemotherapy and serum therapy has been used in certain infections in the past, particularly in pneumococcal and meningococcal infections. Recently, very encouraging results were reported from the use of type-specific (rabbit) serum and sulfonamides in infections due to *Haemophilus influenzae* type B. Alexander, Ellis, and Leidy<sup>8</sup> reported a series of cases of meningitis thus treated with a mortality of only 26 per cent contrasted with a mortality rate of over 90 per cent in untreated cases. At this hospital, too, favorable results have been obtained with this treatment. Of 20 consecutive cases of meningitis 14 (70 per cent) of the patients recovered and 6 (30 per cent) died. Not included in this series are patients who died with-

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From the Bacteriologic Laboratories of the Children's Hospital and from the Department of Bacteriology and Immunology, University of Buffalo School of Medicine, Buffalo, New York.

sulfonamides used in conjunction with immune serums, pyridium, and azochloramid are discussed. The phenomenon of synergism of sulfonamides and other agents deserves further experimental and clinical investigations.

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### Discussion

Dr. Thomas S. Bumbalo, *Buffalo*—In no branch of medicine or surgery has the value of the sulfonamides been more striking than in pediatrics. Mortality rates of many of the infectious diseases of children have been cut appreciably, periods of convalescence have been shortened, and some of the more serious complications, notably, empyema complicating pneumonia, have become fewer. In the face of all this, however, we must admit that the sulfonamides are not the complete answer in many situations where we expected them to be the answer. This winter, for example, we treated at least a dozen cases of typical and atypical pneumonias in children that did not respond to the sulfonamides. Some few failed to respond even after specific rabbit serums were used. This, I am sure, has been the experience of many clinicians and the incentive for the type of research reported by Dr. Neter.

Among the early reports of potentiation of the sulfonamides by other agents was the report by Bierman and Bach\* in 1941 of 2 cases of subacute bacterial endocarditis successfully treated with sulfanilamide and physically induced pyrexia and sulapyridine and physically induced pyrexia. Again, in 1941 Lichtman and Bierman reported on the combined methods of treatment of subacute bacterial endocarditis. They reported 43 cases treated with chemotherapy and heparin, with 5 recoveries;

26 cases treated with chemotherapy and hyperthermia, with 4 recoveries; and 21 cases treated with chemotherapy and hyperthermia induced by the intravenous injection of typhoid-paratyphoid vaccines, with 5 recoveries—a 25 per cent recovery rate. They also reported 6 cases treated with chemotherapy and radium therapy with one recovery. We recently treated a boy 6 years old, with a streptococcus viridans, subacute bacterial endocarditis superimposed on a coarctation of the aorta, with sulfathiazole and typhoid-paratyphoid vaccine intravenously, with what appeared to be very encouraging results. After seven days of normal temperature and marked clinical improvement he died abruptly of what appeared to be a ruptured esophageal varicosity with fatal hemorrhage. We were not able to obtain consent for an autopsy examination to prove our impressions.

One of the infections in which the results have been consistently favorable with the sulfonamides is meningococcus meningitis. However, the more severe cases of this disease illustrate well the favorable results obtained by the synergistic action of the sulfonamides and immune serum. At the Meyer Memorial Hospital we use the combined chemotherapy and serum treatment with most satisfactory results. In 1929 before the advent of the sulfonamides we treated 19 cases of meningococcus meningitis with serum alone with 11 recoveries; in 1930, 11 cases with 8 recoveries; in 1931, 3 cases with 2 recoveries; in 1932, 6 cases with 4 recoveries; in 1936, 12 cases with 8 recoveries; in 1937 (combined serum and chemotherapy) 21 cases with 19 recoveries; in 1938 (combined serum and chemotherapy) 18 cases with 12 recoveries; in 1939, 6 cases with 5 recoveries; in 1940, 4 with 2 recoveries; in 1941, 9 with 9 recoveries; in 1942, 4 with 3 recoveries.

While the results obtained in the treatment of meningococcus meningitis with chemotherapy alone are very favorable, we believe that our lower mortality rate obtained with the combined therapy is a little lower than most results, reported in the literature, with chemotherapy alone.

Since 1929 we have seen 96 cases (both adults and children) of pneumococcus meningitis with only 2 recoveries; one in a child treated with serum alone before the advent of the sulfonamides, the other an adult treated with both serum and chemotherapy.

Since 1922 we have seen, at the Meyer Memorial Hospital, 49 cases of influenzal meningitis with 8 recoveries, all since 1937, treated with chemotherapy alone. Two children treated with combined chemotherapy and Alexander's rabbit serum died. Unquestionably, the sulfonamides are directly responsible for this favorable change in the prognosis of influenzal meningitis, which in our hospital was 100 per cent fatal before the advent of the sulfonamides. These changes constitute one of the most striking achievements in modern medicine. All of these favorable results perhaps can be further improved by either the potentiation of the sulfonamides by other agents, physical or chemical, or by the use of chemotherapy together with serums or other biologicals, natural or perhaps synthetic, that will have a favorable synergistic action.

\* J.A.M.A., Jan. 25, 1941.

# THE RESULTS OF CANCER TREATMENT

CHARLES E. FARR, M.D., New York City

SOME years ago—in 1919, to be exact—a survey was made of 103 cases of malignant disease at the New York Hospital, service of Dr. Charles L. Gibson, during a period of about eighteen months—cases in which a record had been kept of the duration of symptoms and the various reasons for delay in seeking treatment.<sup>1</sup> The results were as follows:

Average period from onset of symptoms to first consultation, 3.19 months

Average period from first consultation to entrance into hospital, 8.7 months

Total delay, 11.89 months

The same cases were then grouped by curability and the advice given by the first physician consulted in each case was tabulated. Advice was considered right when operation was urged, other advice was counted as wrong. Tabulation of advice follows:

		Advice Given	
		Right	Wrong
Incurable cases	48	16	32
Probably curable cases	35	17	18
Curable cases	18	11	7
Totals	101	44	57

In 1938 Dr. George T. Pack and Dr. James S. Gallo<sup>2</sup> reported the results of a study of 1,000 case records in Memorial Hospital, New York, and the Paterson (New Jersey) General Hospital, their object being to determine responsibility for delay in the treatment of cancer. They showed that 44.3 per cent of delay was due to the patient alone, 18.0 per cent to the patient and doctor together, 17.0 per cent to the doctor alone, and in 20.7 per cent of cases no delay occurred.

Again, in 1942, Dr. Charles R. Harms and his associates, with the same object in view, interviewed 158 cancer patients admitted to the New Haven (Connecticut) Hospital or Tumor Clinic. They reported<sup>3</sup> that in only 3 of these cases (1.9 per cent) was there no delay, and that in the remaining 155 cases 54.8 per cent of delay was due to the patient alone, 27.8 per cent to the patient and doctor together, 17.4 per cent to the doctor alone.

The last figure is almost exactly that reported four years earlier. In view of the great importance of early diagnosis and prompt treatment if cancer is to be controlled, these evidences of delay due to the doctor are of startling significance.

Chairman Special Committee on Cancer Control Medical Society of the County of New York

All of these surveys suggest the need for further action along the two lines of education of the laity and education of the physician. Education of the lay public is being carried on by the American Society for the Control of Cancer and its branches throughout the country.

Education of the doctor should be carried on inside the profession itself. To the writer it would appear that the failure on the part of some doctors is due not to neglect or ignorance of early symptoms, but rather more to the feeling of helplessness and hopelessness with which far too many family practitioners still regard cancer. Is such a feeling justified? The writer thinks not.

Let us look at the figures. In early cases of cancer the percentage of five-year cures reported by reliable authorities is as follows:

Cancer of the lip	85 per cent
Cancer of the skin	80 per cent
Cancer of the body of the uterus	80 per cent
Cancer of the breast	75 per cent
Cancer of the cervix uteri	65 to 70 per cent
Cancer of the tongue	40 per cent
Cancer of the stomach	22 per cent

These figures, coming from authorities who see large numbers of cancer patients and who are therefore in a position to speak, certainly justify greater optimism than is expressed by many practitioners. The problem is exceedingly difficult, and because of many factors—age and other disabilities—it is not to be hoped that 100 per cent curability will ever be reached. But in accessible cancers in which early diagnosis is possible a high rate of cures should and could be obtained.

Even in fairly advanced cases the situation is not hopeless and the feeling of despair which is prevalent among the family doctors must be overcome. This feeling is undoubtedly the reason why so many patients are not given a proper chance. Every surgeon of experience has in his case files many examples of seemingly hopeless cancers apparently cured for years. For instance, a woman who had first one, and after a seven-year interval, the other breast removed, in each case with a very large cancerous growth, more than twenty-five years later was still alive and well.

It is true that within the past thirty years the death rate from cancer has increased from 82.1 per 100,000 of population to 160.5, but striking increases occurred also during the same period in diseases of the circulatory system—from 242.1 in

1912 to 373.0 per 100,000 in 1941—and in diabetes—from 17.5 to 40.7. These large increases in mortality from diseases affecting chiefly the older age groups were to be expected, since with the reduction of mortality in the earlier decades of life the percentage of population in the older groups becomes much larger, and of course healing potentialities are lessened with age. As a matter of fact, however, comparison of the present results of the treatment of cancer in patients who are seen within any reasonable time after the onset of symptoms with the results of treatment of other serious diseases twenty or thirty or more years back is not discouraging.

In those years great strides have been made in the treatment and prevention of many of the formerly most deadly diseases, such as tuberculosis, typhoid fever, diphtheria, scarlet fever, and measles.

No such great improvement has been made in the results of cancer treatment; there has been no dramatic change. No new methods have been introduced since radiation therapy was adopted. Nevertheless, there can be no question that results are today better than in the past.

In 1941 the American College of Surgeons announced the registration up to that time of 38,818 five-year cancer cures, including

	Number of Cases
Cancer of the bladder	1,025
Cancer of the bone	361
Cancer of the breast	10,729
Cancer of the larynx	357
Cancer of the ovary	767
Cancer of the rectum, colon, appendix	3,250
Cancer of the skin	2,383
Cancer of the stomach	1,279
Cancer of the thyroid	582
Cancer of the uterus-cervix	8,925
or fundus	1,920
Cancer of other sites	7,240
Total	38,818

Certainly these results must be considered encouraging, yet we hope for still better showings. The chief stumbling block is that we do not get the cases early. The ideal time for treatment is when there is still a clinical doubt as to the nature of the growth.

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## HEALTH SERVICE ESTABLISHES TUBERCULOSIS CONTROL DIVISION

A Tuberculosis Control Division has been established in the U.S. Public Health Service, Federal Security Agency, to wage the nation's \$10,000,000 war against tuberculosis, Surgeon General Thomas Parran announced on July 10.

Dr. Herman E. Hilleboe, who has been in charge of Public Health Service tuberculosis control activities since 1942, was named chief of the new Tuberculosis Control Division.

The division was established under authority given to the Surgeon General by the recent Public Health Service Act of 1944. Dr. Parran's order was approved by Paul V. McNutt, Federal Security Administrator. The Tuberculosis Control Division will be within the Public Health Service's Bureau of State Services, of which Dr. L. R. Thompson is head.

When Congress appropriates the authorized funds, the new Public Health Service division will be able to conduct a program for tuberculosis control comparable to the national program of the Venereal Disease Division, Dr. Parran said.

Functions of the new Tuberculosis Control Division include:

1. Developing more effective measures for the prevention, treatment, and control of tuberculosis.
2. Assisting states, counties, health districts, and other political subdivisions of the states in establishing and maintaining adequate measures for

the prevention, treatment, and control of tuberculosis.

3. Preventing and controlling the spread of tuberculosis in interstate traffic, and any other activities with respect to the prevention, treatment, and control of tuberculosis that may be authorized to be performed by the Public Health Service.

Dr. Hilleboe, born in Westhope, North Dakota, studied at the University of Minnesota Medical School, where he received his Bachelor of Science and medical degrees, and at the Johns Hopkins School of Hygiene and Public Health, where he received a Master of Public Health degree. He is a member of a number of medical societies and health organizations, including the National Tuberculosis Association, on whose board of directors and medical research council he serves.

Dr. Hilleboe was appointed to the Public Health Service as a passed assistant surgeon in the regular Commissioned Corps in 1939. He made special studies of tuberculosis control for the Public Health Service in the Scandinavian countries, France, and England, in 1939. Upon his return from Europe he was made chief of the Medical Unit of the Minnesota Division of Social Welfare, in which capacity he served until 1942, when he was appointed medical officer in charge of the Public Health Service Tuberculosis Control Section, States Relations Division. He became senior surgeon in 1943.

# OPHTHALMOSCOPIC SIGNS OF TERMINAL HYPERTENSION

ARTHUR J. BEDELL, M.D., F.A.C.S., Albany

**T**HIS communication is the result of questions asked by practicing physicians who, when seeking enlightenment, complain that the conclusions of ophthalmologists often leave them not only in doubt as to the findings, but also in a state of confusion regarding prognosis.

It may be presumed that hypertension without demonstrable kidney change is only an early stage of the general state which produces cardiac, kidney, and circulatory signs. It is conceded that therapeutic and hygienic measures may delay the end, that complications caused by increased changes in organs like the kidney or heart may alter the course of the disease, and that excessive localizations may bring death before the entire body becomes equally involved.

It is further agreed that hypertension may be present for many years without impairment of the visual function; that increased pressure is tolerated better by women than by men; and that some physiologic processes, such as, for instance, pregnancy, may inaugurate it. Hypertension is so common, affects so many people, is so influenced by the mental and physical impacts of life, excessive indulgence in alcohol and tobacco, and heredity, that physicians and patients are more conscious of it than ever before.

There may be a long period between the onset and the discovery of the increased blood pressure. The alert physician learns to recognize spasm of the retinal arteries, and appreciates the fact that the sudden loss of vision caused by embolism and endarteritis of the central retinal artery or the closure of the corresponding vein may be the first evidence of the vascular state. Parenthetically, it must be stated that all vessel closures are not caused by hypertension. The competent physician always uses the ophthalmoscope to correlate his general findings.

From the records of hundreds of patients suffering from hyperpiesia a few have been selected to emphasize the importance of recognizing early deviations from the normal fundus and to understand their significance in terms of life expectancy.

The special group of hypertensives which is the subject of this discussion cannot be divided into sharply demarcated classes because there is no definite time or fundus change which specifies the day of transition from a benign state to a malignant one, although there are distinctive patterns which assist in the classification.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944

The fundus changes in terminal hypertension have been selected for this demonstration, and in an arbitrary, but clinically practical, way the cases are segregated into three classes, and, as will be noted, the time of death and duration of the period of observation form the basis of the separation into cases which have been seen for years, patients who were seen only in consultation or for a short time, and those with papilledema. Caution must be observed in placing cases in the papilledema class, because edema is found in all advanced hypertensives and there are numerous causes of choked disk.

## Cases Under Observation for a Long Time

The first subdivision includes patients who have been under observation for years, or months, and in which the fundus picture suggests impending death, although it may not occur for months. The accompanying physical and mental deteriorations may, but often do not develop apace with the ophthalmoscopic danger signs.

The review of a short synopsis of the history and physical findings of several patients will serve to illustrate the necessity of careful and complete fundus descriptions.

*Case 1.*—H. S. had been under observation for thirty-one years when seen on June 22, 1939, when he was 66 years old; the disk was clearly outlined; the arteries were slightly irregular in caliber. There was an isolated increased vessel reflex. His systolic pressure was 230 and he was advised to reduce his mental activities. This he failed to do, and when seen May 16, 1941, fresh striate hemorrhages were found on the disk with definite retinal edema, and his systolic pressure was 210. Even then he failed to follow the advice to lessen his work. He died three months later with cardiac failure.

*Case 2.*—R. M., a navy medical officer who had been under observation for a great many years, was examined October 21, 1940. His vision was corrected to 6/6. The disk was clearly outlined; the veins were normal in distribution and size. The arteries were smaller than normal. There were, however, no irregularities of lumen and there was no increase in the artery reflex. His systolic pressure was 212. He was not conscious of any physical restrictions.

On August 30, 1943, his pressure was 190; his vision was 6/6 with correction. The changes in the fundus—several superficial retinal hemorrhages with gross changes in the artery lumen and retinal edema—were sufficient to order an immediate and complete rest.

The patient had a cardiac attack five weeks later and died.

*Case 3.*—L. F., a 55-year-old dentist, was ex-

amed five months before his death. There were a few soft, white, cotton-wool exudates and the retinal arteries were of very irregular caliber. Three months later the previous exudates had disappeared but new spots had developed. There was definite retinal edema and superficial flame-shaped hemorrhages.

Two months later the retinal edema was still greater, but the hemorrhages and exudates had been absorbed. He died in a few days.

This is an illustrative case of progressive hypertension with excessive pressure and interference with cerebral circulation which led to mental derangement. During the entire period of observation he had only slight and transitory fundus changes which were, however, sufficient to warrant a serious prognosis. His systolic blood pressure was 240 and his vision was never less than 6/6 in each eye.

*Case 4.*—A. J., a physician who had been seen for many years without any fundus or constitutional signs of hyperpiesia, was examined May 14, 1942, because he had had a transitory right facial paralysis. The blood pressure was found to be 210/118.

His corrected vision was 6/6. The right fundus was negative except for two things which were significant: one, a small circular, granular, deep retinal hemorrhage and the other the reduced size of the arteries with increased reflex and irregularities of the lumen. In the left eye the vision was 6/6. The retinal vessels were very slightly constricted. There were no hemorrhages or exudates.

His fundus changes were slight but sufficient to lead to the advice to slow down. Like the majority of active medical practitioners, he could not lessen his burden of anxiety over sick patients, and as a result of the progressively increasing tension he died less than two years later at the age of 55.

*Case 5.*—G. H., when he was 44 years old, had a thrombosis of the left superior temporal retinal vein. The vision of the right eye was corrected to 6/6 and he was comfortable until twelve years later, when he reported for a routine examination.

Vision of the right eye was 6/6. There were several superficial retinal hemorrhages and definite retinal edema with an acute right-angle crossing of the inferior artery over the inferior vein. The disk was edematous with a decidedly uneven surface, most prominent on the nasal side. There were several superficial hemorrhages and a few deep granular ones. The artery reflex was accentuated. The systolic blood pressure was 202. He was advised to work less.

Eighteen months later, his systolic pressure was 250 and, although he felt well and presented no gross evidence of physical distress, his fundus changes were so marked that an urgent message was sent to his family explaining his critical condition. The vision with glasses was 6/6. The fundus was congested. The edema was not only greater in the nervehead but also throughout the entire fundus. Numerous large blood streaks were present and several fine, yellow dots were between the disk and the macula. He died six months later. This case was of interest because during the years' observation there was no measurable change in the course of the retinal arteries.

## Patients Seen for a Short Time

The second subdivision includes patients who, although seen for a short time, presented significant fundus signs.

*Case 6.*—In contrast to the patients who, for one reason or another, fail to relax, we record the history of A. F., who was first seen when he was 71 years old because he felt the need of new glasses. The vision of the right eye, with correction, was 6/6. The nasal side of the disk was edematous, the caliber of the arteries was slightly uneven, but the veins were not compressed by them; and several small, granular hemorrhages were the signs of circulatory disturbance.

The vision of the left eye was 6/30. The disk was clearly outlined; the nasal side was slightly edematous. The arteries were unequal in lumen and many hemorrhages were scattered over the retina. There was a circumscribed macular edema.

The patient was amenable to suggestion and, when told that his blood pressure (232 systolic) was high and that relaxation was necessary, he stopped work, went to a warm climate, and lived comfortably for twenty-two months. No claim is made that rest is the only requisite for prolonging the life of those afflicted with hypertension, but I am convinced that it is of value.

*Case 7.*—C. C., a 44-year-old man who complained of drowsiness and occipital headache, presented the characteristic signs of advanced hypertension as seen in the stout, red-faced individual.

In the right eye the fundus was congested, with broad veins and narrow arteries. The nasal half of the disk was edematous and over the entire disk surface there were fine vessels. The retina was edematous with several thin, cotton-wool exudates.

The left eye presented greater changes. The fundus was dark red, the veins were more dilated than in the right eye, and the arteries were not only narrow but in places markedly contracted, while in others the wall was white. There were many large granular, deep retinal hemorrhages and several small cotton-wool exudates. On the uneven surface of the disk there were delicate lines of fresh blood and an increase in the number of blood vessels.

This was malignant hypertension as photographed thirty days before his death. His pressure varied from 252/156 to 210/125. He died in uremic coma. His fundi had never been examined before.

*Case 8.*—The next case was that of a young man who died when he was 26 years old. Two years before death his fundi were negative. The disks were round and clear with normal vessels and retina and he was in good health. He was not seen again until twenty-five months later. The entire retina in each eye was edematous, with great masses of exudate, soft white clouds, and harder-looking yellow specks. The veins were of normal size and showed neither increased tortuosity nor compression changes. The arteries were very narrow and frequently hidden in the overlying retina. Two kinds of hemorrhage were widely dispersed—superficial streaks and deep granular round spots.

The swelling of the retina pushed the vessels up-

ward and made them appear displaced nasally. His pressure was 235/165, and seven weeks later he died.

### Patients with Papilledema

The presence of papilledema has been made the diagnostic criterion for inclusion in the third subdivision. This group is of the greatest clinical interest, for we must decide whether the hypertension is the sole cause, whether the papilledema is the result of cerebral pressure, or whether hyperpiesia and brain tumor are both present. To arrive at the correct diagnosis is not always easy and at times it is very difficult.

**Case 9.**—Mrs. G., 44 years of age, came for glasses. Her vision was failing and she had never had an eye examination. Three weeks before consultation she had had a pressure back of her head and over the base of her nose. The right eye felt sore and she had severe, generalized headache.

The vision of her right eye was 6/18. The disk was indistinctly outlined, with a pale blue edema partially concealing the vessel extending over it. The swelling was one diopter. The entire retina was edematous and the arteries were of unequal caliber.

The vision of the left eye was 6/15. There was much greater edema, the disk was elevated 3 diopters, with the same pale blue color as that noted in the right. The surface of the disk was uneven and the center was a pale pink because several fine vessels were dilated. The arteries were narrow—in places mere threads. The veins were not distended, but along the superior temporal branch there was a fresh hemorrhage a disk diameter in length and one-third as wide.

Her blood pressure was 220/140. Her physician was told immediately of the seriousness of the condition. She died five days later.

**Case 10.**—When Mrs. D., 41 years of age, was examined because of her poor sight she had only faint light perception. Both nerveheads were immensely swollen—4 diopters—with a yellow, waxen color, retained central excavation, full major veins with very few branches, and very small attenuated arteries. There were no retinal hemorrhages or

edema  
blood

cases. She was 200/100, I advised her to see Dr. Gilbert Horrax. He did a ventriculogram and could find no tumor. She is still alive, but her condition is so critical that she is included in the terminal

**Case 11.**—And, finally, to illustrate combined tumor and hypertension, the case of a 60-year-old woman who was first seen seven years ago is cited. She had no headache and her only complaint was failing eyesight.

The vision of the right eye was 6/400. The disk was elevated 4 diopters, the surface was rounded and vascular, and the central excavation was retained. The retinal arteries were small and compressed the distended veins where they passed over them. There was a partial macular star of exudate.

The vision of the left eye was 6/60. The disk edema was greater—6 diopters; the nervehead was rounded and so prominent that the thick nasal side partially overlapped the still present central excavation. There were several fine hemorrhages on the disk and a few larger ones in the retina to the nasal side. The veins were only moderately full; the arteries were small but not as narrow as those in the right.

The field of vision was of the hemiopic type. Examination showed that she was deaf in her left ear. Her blood pressure ranged from 200 to 170. She was sent to Dr. Horrax, who removed a large left acoustic neuroma.

Her recovery has been gratifying. The disks are flat, and although there is some secondary optic atrophy and a perceptible narrowing of the retinal arteries, she is comfortable and her blood pressure is stabilized at 180.

In a short paper of this nature the greatest difficulty is in keeping the discussion confined to the one phase of the immense problem of hypertension—what fundus signs suggest a serious outcome. A thoughtful perusal will stimulate interest and eventually more patients will receive better advice and perhaps more of them will follow it.

### Summary

This clinical approach to the prognosis of hypertension, as evaluated by one or more ophthalmoscopic examinations, is presented because it has been found serviceable.

### Conclusions

Patients are separated into those who come early, when there is still time to give advice as to how they should live; those who are seen when the finger of death points to them and only by extremely good care can the hand of fate be turned aside even for a short period; and, finally, those who are in the embrace of death and no earthly force can release them.

It is unwise to consider papilledema, or choked disk, as caused by hypertension until brain tumor has been excluded by exhaustive tests.

The object of this demonstration is to describe some of the changes which take place in the fundi of patients suffering from advanced hypertension and to show how their recognition aids in arriving at a correct prognosis as to the probable duration of life.

### Discussion

Dr. Searle B. Marlow, *Syracuse*.—Dr. Bedell has graphically presented the clinical and ophthalmoscopic picture of hypertension in its terminal stages. There should be no difficulty in the recognition of the condition nor hesitancy in diagnosis. Differential diagnosis, as Dr. Bedell has been careful to point out, may sometimes be difficult. An accurate

diagnosis is essential, especially from the point of view of prognosis, for in cases of thrombosis it is probably true that these patients live longer. It must be conceded that if treatment, medical or surgical, is to be of benefit this condition must be recognized long before the changes described by Dr. Bedell are in evidence. The part played by the ophthalmologist in this connection, is of no small importance.

The frequency of the occurrence of these changes in office patients is apparent from a review of 2,000 consecutive new office cases of all ages. Among the records 142 were found on which there was a definite note concerning the state of the retinal vessels. No doubt this number is low, as many fundi were probably recorded as normal if the vascular changes did not seem excessive in view of the patient's age. In only twenty-four instances was there a history of hypertension according to the patient's statement or that of the physician in charge. There were five patients with a history of hypertension who showed no ophthalmoscopic signs. Among these 142 patients there were only 9 with retinal hemorrhages, 3 of these having, in addition, exudates, so that the advanced changes described by Dr. Bedell may be said to have occurred only three times in 2,000 cases.

There were, however, 9 cases of thrombosis and 1 of homonymous hemianopia. These figures indicate that, whereas the instances of the advanced changes are low, the earlier changes are much more frequently seen. One can only agree with Dr. Bedell that the ophthalmologist has a duty in advising these patients to seek medical care as well as to inform their physician of the conditions found.

It is impossible to review all the etiologic theories in regard to hypertension and the pros and cons of treatment. It is well, however, to remember that the retinal changes are not the only ophthalmologic complications to be found in this disease. These observations are based on office patients. Undoubtedly a review of a similar number of hospital patients (they are sicker) would produce a much higher incidence of advanced changes and a review of a selected group of cases of hypertension a still higher.

The whole point of this discussion is that, whereas few advanced cases may be seen, the opportunities for help to the patient and his physician in the early stages are many.

Dr. Morris H. Newton, *Little Falls*.—Four or five years ago I became slightly interested in hypno-

sis in relation to speech defects and hysteria. The chief conclusion of my limited investigation was the fact that one who undergoes hypnosis successfully appreciates the true meaning of the word relaxation. Some of our patients drive themselves all day and, even though they assume a recumbent position at night, carry through a muscle tone and mental anxiety which, I believe, if it is not the cause of hypertension, is a definite aggravating factor.

I might mention in passing that my interest in hypnosis lagged after a patient with intermittent bilateral vertical nystagmus with no visible pathology, who seemed to improve for a long period after hypnosis later was found to have and was operated upon for a tumor of the occipital region.

On May 4, I saw Mrs. M. N., aged 45, an apparently healthy woman whose vision was corrected to normal in each eye and whose blood pressure was 170/90. She had been told that this was not alarmingly high and she continued her daily routine, plus extra duties, in an endeavor to forget the dangers to which her son is being subjected on the high seas. Her retinas showed definite blood vessel changes—depressions at the right-angled crossings and minute hemorrhages in the right disc. This woman is intelligent and, I believe, will cooperate fully in the regulation of a more relaxed life.

A woman, F. P., aged 49, who has been in our employ as a domestic for nine years, was an exceptional worker. She drove herself from ten to twelve hours daily at our house besides caring for her husband and two children at her own home. Four years ago it was discovered, following a cerebral accident, that her blood pressure was 220/140, with vision correcting to normal. Two and a half years ago she had a gross hemorrhage in the right eye following a hysterectomy. The fundi at that time showed a malignant hypertension and I told the family that, unless she lived a more relaxed life, her life span would be less than two years. She is still active in her home and occasionally does light work outside.

I am of the opinion that most patients and their physicians consider blood pressure from a purely numerical standpoint and are not made conscious of the pathology and causative factors behind it and the benefits of mental and physical relaxation.

Dr. Bedell's paper this time, as always, stimulates my interest in fundus pathology through his concise, practical, and picturesque presentation of the subject.

## NATIONAL FOUNDATION FOR INFANTILE PARALYSIS OFFERS SCHOLARSHIPS

The National Foundation for Infantile Paralysis has made grants to provide scholarships in physical therapy and orthopaedic nursing for doctors, nurses, and physical therapy technicians. The amount of the scholarship is determined on an individual basis. The training courses are for a period of one year.

The American Physiotherapy Foundation is administering the scholarships for physical therapy technicians, and the National Organization for

Public Health Nursing, Inc., and the National League of Nursing Education are administering the orthopaedic nursing scholarships. In addition to these projects, the National Foundation for Infantile Paralysis has established seven training centers which provide short-term courses teaching the changes introduced in the last few years in the treatment of infantile paralysis, including instruction in the Kenny method.



# PENTOTHAL SODIUM ANESTHESIA IN SHOCK AND HEMORRHAGE

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**D**ESPITE the plethora of material that has been written on the uses of sodium pentothal there exists an unsolved problem. The question as to whether it should be employed for anesthesia in patients depressed from the effects of shock and hemorrhage remains unanswered.

Review of the recent reports on the use of this agent in military casualties reveals conflicting opinions. There exists an open question as to whether pentothal sodium should ever be employed in the anesthesia of severe casualties. As with all problems semi-theoretical, the solution lies in sufficient critical observation and analysis of practical results.

Under normal circumstances one principle should remain inviolable: that a state of circulatory insufficiency resulting from either shock or hemorrhage must be restored to normalcy before any surgical or anesthetic procedure is attempted. In military exigencies it may not always be possible to apply this time- and labor-consuming principle. Hematocrit studies, serial blood studies, and plasma protein determinations will not always be available. Inevitably, cases will be presented for emergency surgery that are in the occult stages of shock and hemorrhage. Anesthetic and surgical trauma are disastrous in this type of case.

Several properties of pentothal sodium make it attractive for use in military field anesthesia. Transportation difficulties are minimized. It is nonflammable. A minimum of apparatus is required. The ease of induction, maintenance, and the uneventfulness of recovery in the good-risk patient lends support to the somewhat prevalent impression that it can be administered without hazard.

A brief résumé of the essential physiologic changes occurring in shock and hemorrhage, and of the characteristics of pentothal sodium, will be presented here. The method of administration of pentothal sodium will be considered. Some refinements in the control of anesthetic levels are suggested. These facts may prove superfluous to the professional anesthetist. They will prove valuable to medical officers who have had a limited experience with anesthetic problems.

## Pharmacologic and Toxic Characteristics of Pentothal Sodium

The outstanding characteristic of the barbiturates administered in large anesthetic doses

is depression. The vital centers effected most severely are the respiratory center, the vasomotor center, and the carotid sinus mechanism. Blood pressure is decreased with large anesthetic doses due to the direct action of the drug on the myocardium, and to the direct action of the drug on the vasomotor center with peripheral vasodilatation.<sup>1</sup> The result of these changes is stagnant anoxia due to decreased volume flow. The depression of the respiratory center results in a decrease in minute volume exchange. The decrease in ventilation favors the development of an anoxic anoxia. The ultimate result of both the circulatory and respiratory depression is deficient tissue oxygenation.

Of considerable importance is the fact that the laryngeal and pharyngeal reflexes remain active in all but the profound levels of pentothal sodium anesthesia. Pentothal sodium is a bronchoconstrictor.<sup>2</sup> Under certain conditions these factors can become a major hazard, causing a serious or complete reduction in respiratory exchange. Excessive concentrations of barbiturates may dilate and injure capillary beds to such an extent that shock ensues.<sup>3</sup>

## Physiology of Shock and Hemorrhage

Omitting the controversial aspects of surgical shock and hemorrhage, there remain several undisputed physiologic facts.

Circulatory insufficiency and tissue anoxia are a major factor in the mechanics of early shock and in the advanced stages of hemorrhage. Endothelial damage (the end result of tissue anoxia) produces the ultimate pathologic changes of shock and probably of hemorrhage.<sup>4</sup> Sustained hypotension from any cause creates a condition of circulatory insufficiency that becomes progressive. The condition acquires a self-perpetuating quality having the features of a vicious circle.<sup>5</sup> Anoxia will cause circulatory deficiency and circulatory deficiency will cause anoxia. The vicious circle set up is aptly termed the cycle of death.<sup>6</sup>

## Correlation of Drug Characteristics and the Physiology of Shock and Hemorrhage

In correlating the reactions of the barbiturates with the physiologic changes occurring in shock and hemorrhage, several serious incompatibilities appear.

The depression of minute volume exchange resulting from deep pentothal sodium anesthesia results in an anoxic anoxia. As an-

From England General Hospital

	1	2	3	4	5	6	7-8
I					4+		
II			++++		4+		
III			++++ +++ +		3+		
			-		2+		
					1+		
					0		
4					-		

Fig. I

1. Respiration
2. Pupils (Inconstant)
3. Eyeball Activity
4. Axis Deviation

5. Muscle tone upper lid
6. Eyelid reflex
7. Pharyngeal Reflex
8. Laryngeal Reflex

oxemia already exists in shock and hemorrhage, reduction in minute volume exchange is ill-advised. The depression of the vasomotor center, the peripheral vasodilatation, and the myocardial depression resulting from large anesthetic doses of pentothal sodium are directly antagonistic to the compensatory reactions that the organism attempts to effect in shock and hemorrhage. Further insufficiency of circulatory volume and tissue anoxia result. The sequence of anoxia-endothelial damage is reversible to a point, but beyond that point the damage becomes irreversible, and death is inevitable.

### Method of Administration

It seems highly desirable that if pentothal sodium is selected for anesthesia in patients handicapped by shock and hemorrhage, more exact control of the anesthetic level be exercised. Avoidance of profound anesthesia and as drastic a reduction in total drug dosage as possible are mandatory. Review of the literature and observation of methods of controlling anesthesia with pentothal sodium leave the impression that the concept of the exact signs of anesthetic levels is somewhat vague.

Demonstration of the exact signs of anesthetic level referred to necessitates the use of a 2 per cent solution of the drug. Administration must proceed in intermittent doses of 2 to 3 cc. Sufficient time (fifteen to thirty seconds) must elapse

between injections for the maximal effect of each dose to become evident. Patients depressed by shock and hemorrhage are rapidly and deeply anesthetized by extremely small amounts of any anesthetic agent.

Some form of a mechanical syringe holder is a convenience, as it allows the anesthetist to stand at the patient's head and observe the progress of anesthesia minutely. Some visible indicator of respiratory exchange is desirable.

### Signs of Anesthesia

The slow induction of anesthesia as outlined enables the anesthetist to utilize as a guide most of the classical signs of the various anesthetic levels. (The pupillary changes are the exception, as they are of no value until profound anesthesia occurs.) The signs described apply to anesthesia in good-risk as well as in handicapped patients.

A modification of Guedel's<sup>6</sup> chart (Fig. 1\*) is employed to illustrate the anesthetic signs. Emphasis is placed on certain of the signs as more applicable to pentothal sodium anesthesia.

The arrival of the patient in first and second plane of pentothal sodium anesthesia is signified by the following signs:

1. In mid-first-plane anesthesia the eyeball activity becomes progressively less, the eyeballs tending to rest in eccentric positions. The

\* Reprinted with permission from the Macmillan Co.

muscle tone of the upper lid becomes progressively diminished, although the wink reflex at this point may not be totally abolished. Some residual muscle tone may be demonstrated in the upper lid by flicking the patient's lid upward with the ball of the index finger. This discrimination is a fine one, requiring a practiced appreciation of minute differences in muscle tone. The breathing tends to be regular and of fair volume at this point.

2 As anesthesia progresses into second plane the eyeball activity disappears. The eyeballs come to rest exactly in a centric midline position. The muscle tone of the upper lid disappears completely, causing the palpebral fissure to widen spontaneously. Flicking the upper lid gives the impression of complete flaccidity. The breathing remains regular, and may or may not diminish in volume at this point. As the anesthesia progresses into lower second plane and on to third plane, there is a distinct decrease in amplitude of respiration, and an increase in rate.

3 The pupillary signs are not of any value up to and including second plane anesthesia. The pupils do not dilate until a profound depth of anesthetic level is reached. This dilatation may be anoxic in origin.

### Clinical Application

Reflex response to skin trauma is ordinarily abolished in the upper half of the first plane. It follows that it is necessary to produce anesthesia to a depth slightly exceeding this level for even minor surgery. Skin trauma inflicted at an anesthetic level more superficial than lower first plane results in reflex movement of the patient. Premature surgical trauma frequently results in laryngospasm with embarrassment of respiratory exchange.

It is practical to induce anesthesia employing pentothal sodium, limiting the depth of anes-

thesia to lower first plane or upper second plane. It is possible to maintain an even course of anesthesia at either of these levels. The closest attention to the signs described is required, in order to maintain a level of anesthesia which will not regress into upper first plane, or progress into lower second plane and beyond.

### Summary and Conclusions

1 The relevant changes of physiology in shock and hemorrhage have been described.

2 The major pharmacologic characteristics of the barbiturates in general, and of pentothal sodium in particular, have been enumerated.

3 The antagonistic relationship between the reactions of pentothal sodium and the physiology of shock and hemorrhage have been discussed.

4 A method of accurately determining anesthetic levels in pentothal sodium anesthesia has been presented.

5 Pentothal sodium is not considered to be the anesthetic agent of choice for military casualties, when shock or hemorrhage exists.

6 Shock and the effects of hemorrhage must be corrected prior to any surgical or anesthetic procedure.

7 Should pentothal sodium be administered in such a case, meticulous care must be exercised to avoid profound anesthesia.

### References

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- 2 Ariani John. *Anesthesiology* 4:3 255.
- 3 Moon V. H. *Shock Dynamics Occurrence and Management* Philadelphia Lea and Febiger 1942 pp. 107-210.
- 4 Moon V. H. *Shock Dynamics Occurrence and Management* Philadelphia Lea and Febiger 1942 pp. 53-94.
- 5 Moon V. H. *Shock Dynamics, Occurrence and Management* Philadelphia Lea and Febiger 1942 p. 214.
- 6 Guedel A. E. *Inhalation Anesthesia* New York Macmillan Co. 1937 p. 25. Chart 2.
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### "PATENT MEDICINE" BALLYHOO ON THE RADIO

Although many leading publications of the country have made a serious effort to eliminate the worst of the "patent medicines" from their advertising pages, numerous radio stations remain notoriously backward in this respect. Hour after hour, day after day, loudspeakers of radios blare forth outrageous claims for some no-trum or "patented" home remedy. The "patent" remedies advertised range from those that may be positively harmful to those that are merely grossly overpriced in relation to their value. Even these, however, tend to delay the use of dependable foods or services and initiate the expenditure of funds that might better be applied to securing scientific diagnosis and treatment. Recently newspapers as

widely different as the *Chicago Tribune* and *PM* have almost simultaneously exposed some of the most notorious of the "patent medicines." But newspapers alone cannot solve this problem. The situation requires the housecleaning efforts of the radio industry itself and the more active interest of those in Trade and Professional Associations with responsibility in this regard.

The interests which exploit the sick through "patent medicine" advertising on the radio should not be allowed to tamper longer with the health and pocketbooks of the American people.—J. A. M. A., May 13, 1944.

# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the September 1 issue and will concern "Use of Sedatives and Narcotics."

### Management of Disorders of the Thyroid: III. Cardiovascular Disturbances

DR. McKEEN CATTELL: Not infrequently the hour has proved too short to cover completely the topic assigned, and that was the case with the two conferences on the diseases of the thyroid. We thought it would be worth while this morning to discuss further a special aspect of this problem; that is, the treatment of the cardiovascular complications of thyroid disease. Dr. Gold, will you open the discussion?

DR. HARRY GOLD: Let me state at the outset that one should distinguish between cardiovascular complications and cardiovascular manifestations of thyroid disease.

A patient with Graves' disease may be subject to rheumatic heart disease, arteriosclerotic disease, or some other form of heart disease, and in that case we have one disease complicating the problems of the other, but I think it is intended to relate the discussion today not to that group, but rather to those disorders of the heart which occur as the direct result of the thyroid disturbance. The designation, cardiovascular complications of thyroid disease, is not strictly accurate as applied to this group. They should be referred to as the cardiovascular manifestations of thyroid disease. Cardiac disturbances may, indeed, be the dominant manifestations of thyroid disease in some cases.

These disorders are quite common. The heart is often involved in thyroid disease. Rapid heart action occurs in the vast majority—not in all, but in most of the cases. The cardiac difficulties present pressing problems, I should say, in about one-quarter of all the cases, perhaps even more. In many cases the heart presents the most serious aspects of Graves' disease. In a small number of patients—I am not sure how large that number is—the cardiac disturbances are the only manifestations, at least for a period—sometimes a period of years—after which the true nature of the cardiac disturbance reveals itself as one which has its basis in so-called "masked hyperthyroidism."

The more common disorders are sinus tachycardia, ectopic auricular tachycardia, auricular

fibrillation, and congestive failure. Some patients have more than one type of abnormal rhythm. Auricular flutter is a less common accompaniment. Auriculoventricular block is also uncommon.

The chief nonspecific agents which are effective in the control of these disorders are quinidine, digitalis, mechoyl, and iodine. Now we must add thiouracil. Thyroidectomy cures in the vast majority of cases of Graves' disease. The administration of thyroid materials controls them in the occasional case in which the underlying cause is hypothyroidism or myxedema.

There are certain special features about the cardiovascular disorders of Graves' disease which have a bearing on the choice of treatment, and also on the outcome. The first is that the disorders of the heart in Graves' disease are likely to be paroxysmal or transient. The auricular fibrillation caused by thyrotoxicosis usually disappears within a few days after thyroidectomy.

The congestive heart failure which is caused by toxic thyroid disease is also apt to be transient. It is, as a matter of fact, one of the striking features of the history of heart failure in the thyrotoxic patient, namely, that he, or more often she, has had repeated attacks of failure without the customary precipitating causes, such as effort or infection, and that there have been long periods of remission. Such a history of recurring attacks of heart failure without the usual causative factors is strongly suggestive of thyrotoxic heart failure.

It is also noteworthy that the heart disorders of thyroid disease are reversible to a very high degree. This also applies to the enlargement of the heart in thyroid disease. A large proportion of the cases, particularly the more severe ones, have some enlargement—it is usually mainly a dilatation—and with the cure of the thyrotoxic disease the heart usually returns to its normal size. Even in cases of heart failure with congestion of the most extreme grades, in which patients seem in extremis, and fail to respond to the ordinary forms of treatment, the control of the thyrotoxic disease by thyroidectomy often results in a cure

of the heart condition that is to all intents and purposes complete. Such complete cure is very rarely encountered in any other forms of heart disease with failure.

The third general characteristic of this group is that thyrotoxic heart disorders are in general more resistant to the common cardiac drugs than similar disorders of other cause. The distinction is not absolute. There are a great many cases of auricular fibrillation due to thyrotoxic disease in which the heart can be slowed readily with the usual doses of digitalis, and there are many cases of heart failure due to thyrotoxic disease which can be satisfactorily controlled with the usual doses of digitalis, but there is among them, on the whole, a larger number of patients who do not respond satisfactorily even to the largest doses than among individuals with heart disease of other cause.

These, then, are the three outstanding characteristics of the thyrotoxic heart: the transient disorder, the reversibility of even very severe forms of disorder (failure and enlargement), and the tendency to show a greater resistance to the usual therapeutic measures.

The rapid heart rate of Graves' disease is usually a sinus tachycardia. When it is of the order of 110 or 120 a minute, it does not require treatment. There are individuals, however, in whom the disease becomes very active and the rate speeds up to 200 or so a minute, much too fast for an efficient circulation. It is fortunate that this does not happen very often, because we have no direct means of slowing the sinus tachycardia of thyrotoxicosis. Digitalis is of no value. It is often given for sinus tachycardia and in large amounts. All that results after enough of it is poisoning. The heart rate remains fast. Nor does quinidine slow this type of tachycardia. The only way to slow the sinus tachycardia of thyrotoxic individuals is to control the thyrotoxicosis. The measures are the administration of iodine and/or thyroidectomy. In the preparation for thyroidectomy the heart will slow in a striking manner after suitable doses of iodine. The effect of this treatment is usually temporary. I think it should be regarded essentially as a pre-operative measure rather than as a means of maintaining the heartbeat at a slow rate in a thyrotoxic patient. It is rarely possible to keep it slow with iodine alone over more than periods of weeks.

The dose of iodine necessary for that purpose is not very large—not very large as doses of iodine are considered in therapeutics—but it really represents a great deal of iodine. One teaspoonful of the syrup of hydriodic acid daily will slow the heart rate in these cases from 120 or 130 a minute way down to normal levels within a

period of about a week or ten days. A teaspoonful of hydriodic acid is not usually considered a large dose, but again, in terms of iodine content, it is a good deal. It contains about 50 mg. of iodine, which represents about twice the iodine present in the body of a normal individual.

Regarding the treatment of auricular fibrillation in thyrotoxic disease, the workers in this field seem to be in agreement with respect to only one point, namely, that the fibrillation should be abolished. Some wait for spontaneous cessation and others use drugs to abolish it, but there is no consensus as to when the fibrillation should be abolished, and as to what should be used for the purpose. Some depend upon digitalis, others use quinidine.

There seems to be a belief that quinidine ought not to be given in auricular fibrillation of the thyrotoxic patients prior to operation, and the advice seems to be fairly general, in writings on the subject, to use quinidine after the operation, if within a certain period of time the fibrillation does not cease spontaneously. Well now, how long after? One writer says within two days, and another advises to wait at least three months before quinidine is given.

I am not sure what the reason is for the objection to the use of quinidine prior to operation to abolish an attack of auricular fibrillation in a thyrotoxic individual. I would like to recommend that an attempt be made in every patient who develops auricular fibrillation as the result of thyrotoxic disease to abolish the fibrillation by quinidine, provided the case is without the usual contraindications to the use of quinidine, or presents factors which make digitalis more desirable, namely, a complicating mitral disease of long standing, or an auricular fibrillation which may have been going on for many months, or congestive heart failure. Perhaps we can have some discussion of this point. I know of the argument that quinidine prior to operation will fail to abolish the fibrillation. I do not wonder at the failures. The doses commonly used are too small. The way to use quinidine to abolish auricular fibrillation in these cases is to give 10 grains of the sulfate every two hours until the normal rhythm is established, or until the minor toxic symptoms preclude its further use.

The idea also seems to prevail that the thyrotoxic patient is more sensitive to the toxic effects of quinidine than the normal individual. I am inclined to doubt it. In the old Forchheimer treatment of Graves' disease quinine was given in very large doses, 2 to 6 Gm. a day, and it was considered characteristic of thyrotoxic patients that they were more tolerant to the toxic effects of quinine than normal persons.

If quinidine is not successful in abolishing the

auricular fibrillation and the rate is very rapid, digitalis may be used to slow the ventricular rate to as nearly normal levels as possible. Give the patient 1.25 mg. of digitoxin (Digitaline Nativelle) at one time. Within eight to ten hours the rate will slow, as a rule. The likelihood of toxic symptoms with this dose is practically nil. If it isn't enough, give a tablet or even two tablets of 0.2 mg. daily as necessary. If you use digitalis leaf, a daily dose of 6 grains for two or three days is likely to accomplish essentially the same result. A daily maintenance dose is, of course, necessary in every case.

Congestive heart failure of thyrotoxic disease requires the same treatment as heart failure under other conditions. Full digitalization comes first. If the failure symptoms do not subside with that treatment alone, 1 or 2 cc. of mercupurin or salyrgan with theophylline given intravenously every day will help a great deal. The administration of iodine will sometimes produce dramatic effects in these cases. The iodine may be given in the doses suggested before: a teaspoonful daily or twice daily of the syrup of hydriodic acid.

The only measure which insures a high proportion of cures in thyrotoxic disorders of the heart—one rarely speaks of cure of heart disease, but when the condition is due to thyroid disorders cure is common—is thyroidectomy. The medical treatment of the heart in thyrotoxic patients cannot stand up long by itself. It should be considered for the most part as pre- and post-operative treatment. Thiouracil may indeed now change the outlook for protracted control by medical treatment. We shall have to wait to see how that turns out.

DR CATTELL. Dr. Eggleston, will you continue the discussion from the standpoint of the patient with hypothyroid disease?

DR. CARY EGGLESTON: This is an aspect of thyroid disease which is not well established. There are many who feel that there is no such thing as the myxedema heart, as originally described a number of years ago by Zondek, in Germany, and supported in this country very largely by Fahr. On the other hand, there are many who do feel that there are relatively rare cases in which myxedema is largely responsible, possibly wholly so, for cardiac insufficiency. There is no satisfactory evidence as yet which permits us to say which of these two groups is correct. Personally I think the truth lies between them; that there are small numbers of patients with myxedema in whom there is evidence of cardiac failure and in whom adequate control of myxedema may relieve the cardiac failure.

It has been noted that in such patients who have had myxedema with symptoms of cardiac insufficiency who have come to autopsy there

has been a very high incidence of coronary arteriosclerosis, and there are many who feel that it is this process rather than the myxedema which is responsible for the cardiac manifestations.

A few years ago, as the result of the efforts to reduce basal metabolism as a therapeutic process in reducing the work of the heart, the Boston group operated upon a good many patients with heart disease—heart disease of the anginal type and heart disease of other types—causing a total ablation of the thyroid resulting in a myxedema and reducing the basal metabolism in general to levels below -25 per cent. This gave us an opportunity to observe the effects of induced hypothyroidism upon the heart. In few or no instances were there any apparent detrimental effects, and so far as effects were observed, they were largely beneficial or else of no significance.

The manifestations of hypothyroid disorders of the heart differ distinctly from the ones spoken of by Dr. Gold. It is true that tachycardia may appear. Usually it is concomitant with an associated heart failure. The rate is commonly slow in myxedema. Arrhythmias are occasionally observed. Ectopic premature beats, generally of the ventricular rather than of the auricular type, have been observed. However, the irritability of the myocardium is in general reduced in myxedema so that we are not greatly troubled with the problems of dealing with these functional disturbances of the cardiac mechanism. The usual picture is one of congestive failure.

Less usual is that of the anginal syndrome. Where the anginal syndrome is present in the myxedematous patient it is a reasonably sound assumption to presuppose that it is due to coronary arteriosclerosis and coronary insufficiency.

The temptation is to treat the myxedematous patient who has cardiac manifestations radically. This temptation must be checked, because these patients seem to be quite sensitive to harmful effects of the administration of thyroid. It has been the practice of some to give as much as 1 Gm. of thyroid (15 grains) per day in the beginning of therapy. This has resulted disastrously in the hands of some of those who have practiced this irrational form of therapy. I believe that one should, if he is faced with the necessity of controlling cardiac symptoms, begin with the administration of small doses of thyroid or of thyroxin, doses of thyroid extract of not more than 30, possibly 60 mg. per day, and gradually increase if the treatment is well borne. We have seen a few of these patients in the hospitals in whom we have been able to control the symptoms quite satisfactorily on this regimen and get them into a thyroid balance that was reasonably adequate. On the other hand, we have seen several patients whom we could not control adequately

because the administration of thyroid, even in much smaller amounts, very promptly induced symptoms of angina pectoris. The symptoms of angina pectoris, as far as the patient was concerned, were worse than his manifestations of myxedema.

The other methods for the control of congestive heart failure are as described by Dr Gold, particularly the use of digitalis, but in my experience they have been rather unsatisfactory. If the patients do not respond to thyroid administration, I think there is very little that can be done for them.

I do not want to leave the impression that the myxedema heart, so-called, is an important form of cardiovascular disease. In my experience it is rare and it is generally relatively unimportant and often adequately controlled by a particular control of the myxedema through the administration of small ascending doses of thyroid or thyroxine.

DR CATTELL. Before opening the subject for general discussion, I would like to ask Dr Shorr to comment on the presentations to which we have just listened.

DR EPHRAIM SHORR. I would like to discuss Dr Eggleston's remarks about the myxedema heart first. There are several points which have struck us in this syndrome. The first is the infrequency with which heart failure is encountered. When I think back on the last 15 or 20 patients that we admitted to the hospital I can recall none with heart failure. The unusually high incidence of coronary thrombosis is also noteworthy. Its distribution in the general population between women and men is about one to five, whereas in the myxedema group which is of course composed largely of women, in the last 15 cases I can recall at least 4 patients with coronary thrombosis after replacement therapy.

With respect to the dosage of thyroid, I was so glad that Dr Eggleston stressed the necessity for low or small doses. We are inclined to refuse to treat myxedema patients unless they are willing to come into the hospital. We generally use even smaller doses than you advocate. Dr Eggleston, and the size of the dose is dependent upon the cardiac difficulty. We are inclined to start with 8 mg daily and not increase it until the effect of the dose levels off. The initial increments of dosage are small, from 8 to 15 mg from 15 to 30 from 30 to 45. During this period we ask the patient to be up and around because the behavior in bed is no indication of how the patient is going to behave when up and around.

We generally take, if we can, about two months to bring such a patient to the optimum, and that optimum is not decided by any arbitrary standards of the level of the basal metabolism. It is

that state, whether it be with doses of 30 mg, or 60 mg, or 180 mg, in which the patient obtains relief from symptoms without cardiac distress.

Here is an excellent opportunity to take advantage of a natural state, which the Boston group has been producing by operation. The patient with myxedema has, in a sense, natural thyroidectomy. He can be regulated at the level at which he is comfortable, without previous surgery.

I do not have any doubt, Dr Eggleston, of the existence of the myxedema heart, in the sense that the heart rate is slow, the size is generally increased, the circulation is slow, the work of the heart is less, and the PR interval may be prolonged to as much as 0.54 seconds in some cases. With therapy all of these usually revert to normal.

I would like to discuss Dr Gold's reference to "masked" Graves' disease. We are too often inclined to look for the textbook picture of Graves' disease: exophthalmia, a rapid heart, a large mass in the neck. People in the older age group just do not have this typical form of Graves' disease. The erroneous impression has grown up from work in certain midwestern centers that in the older group we have two types of disease: toxic adenoma and Graves' disease, and that toxic adenoma is merely hyperthyroidism, while Graves' disease is something else. This notion, to my mind, is erroneous. Whenever we see a patient in the old age group who has cardiac disease which does not respond as it should and with no obvious reason for it, we should suspect Graves' disease, regardless of the presence or absence of the so-called typical picture of Graves' disease.

DR EUGENE F. DUBOIS. Dr Evans and Dr Stewart have been doing a great deal of work on the heart in Graves' disease and myxedema. Could we have some remarks from them?

DR WILLIS F. EVANS. The pale, cold, dry skin of patients suffering from myxedema suggested that there might be a decreased amount of blood allotted to the peripheral circulation. The peripheral blood flow has now been measured before treatment and on several occasions during the course of thyroid administration in five subjects exhibiting the signs and symptoms of this disease. In addition, observations of the basal metabolic rate, the circulation time (arm to tongue), the blood pressure, and the pulse rate have been made for correlation with the data relating to peripheral blood flow.

At a time when the basal metabolic rate was low in the myxedematous subjects, the peripheral blood flow was also decreased. With increases in basal metabolic rate toward normal, as the result of therapy, there were successive and

parallel increases in peripheral blood flow. This relationship between metabolic rate and blood flow was linear. The pulse rates and pulse pressures of each of the 5 patients showed trends parallel with changes in basal metabolic and peripheral blood flow, that is to say, they increased with the giving of thyroid. The arm-to-tongue circulation time was measured by means of decholin. Before treatment the circulation time was prolonged. It became shorter during treatment with thyroid.

Measurements of cardiac output have not been carried out in these subjects. However, Stewart, Deitrick, and Crane made such measurements in a group of myxedematous patients and found that it was low at first, and increased to normal with rise in basal metabolic rate upon the administration of thyroid.

Studies similar to the ones just reported have been carried out in 18 patients suffering from hyperthyroidism, a disease at the opposite end of the metabolic scale from myxedema. In thyrotoxicosis, at a time when the basal metabolic rate was high the peripheral blood flow was increased. Parallel decreases in basal metabolic rate and peripheral blood flow occurred during iodine therapy, and both returned to normal levels after subtotal thyroidectomy. If the data relating to blood flow and metabolic rate for the two diseases were plotted on the same chart, a linear relationship would be apparent. With progressive increases from the low basal metabolic level of the myxedematous state to the high basal metabolic level of the hyperthyroid subjects, there was progressive increase in the peripheral blood flow. Recordings of pulse rates, pulse pressures, and circulation times in the thyrotoxic patients were of an opposite order to those observed in the subjects suffering from myxedema.

The cardiac output was measured in one of the hyperthyroid subjects. At first it was markedly increased, and decreased with the administration of iodine and again after subtotal thyroidectomy. Boothby and Rynerson observed that in thyrotoxicosis there was greater increase in cardiac output than occurred in normal subjects as a result of a corresponding increase in oxygen consumption because of work. It was shown that during this time the arteriovenous oxygen was decreased. Stewart, Deitrick, and Crane showed that in myxedema the arteriovenous oxygen difference was increased. Since the total cardiac output and peripheral blood flow were greater than those required for tissue metabolism (as indicated by decreased arteriovenous oxygen difference), the increased peripheral blood flow in thyrotoxicosis served to increase heat loss, whereas the decreased peripheral blood flow in myxedema served to conserve heat.

DR. CATTELL: We would like to round out the discussion with some questions.

DR. CHARLES H. WHEELER: Dr. Cattell, I think it should be emphasized that in cases of myxedema studied by Dr. Harold Stewart some years ago he observed that the heart was enlarged, the circulation time was slowed, the venous pressure was increased, the cardiac output was considerably decreased, and the work of the heart was impaired. With treatment, all of those various functions of the cardiovascular system were restored to normal. In the light of those studies there can be little doubt that myxedema has a definite effect on the heart which perhaps only in a small percentage of cases becomes so marked as to induce symptoms or signs of heart failure.

DR. HENRY B. RICHARDSON: By what treatment were they restored to normal?

DR. WHEELER: By the administration of thyroid substance.

DR. CATTELL: That is in accord with your more recent observations, is it not, Dr. Evans?

DR. EVANS: Yes.

DR. EGGLESTON: I think a very important point to emphasize is that there are changes in cardiac function and that there are changes in the circulation as a whole in myxedema. This is very evident, but that there is any such clinical condition as the myxedema heart, as an entity separate from that due to coronary disease, as we have the hyperthyroid heart which is so frequently seen, appears to be rather doubtful.

These cases in which myxedema is apparently the primary or sole cause of cardiac failure are, I think, indeed rather rare, and it was from that point of view that I was directing my remarks.

DR. RICHARDSON: From the therapeutic standpoint, the circulation in the heart in myxedema is not capable of carrying the load of the normal metabolism if that metabolism is suddenly superinduced artificially by thyroid material.

DR. DuBois: Is not the myxedema patient protected by lethargy?

DR. RICHARDSON: Do you not get the impression that there are many who would have symptoms of coronary disease if they had not been protected from it by the onset of myxedema?

DR. SHORR: Yes.

DR. CATTELL: It is apparent that a sudden increase in metabolism would be harmful, since the necessary circulatory adjustments require a certain length of time, and the heart would not be immediately fit to carry the increased load.

DR. SHORR: There is one point I would like to raise. We are inclined to think that the body is very efficient as a mechanism and that when



things abnormal occur, that very nice adjustments are made to it, but I think that Graves' disease is one example of where the body falls down. As Dr Evans pointed out, the various circulatory indices are far in excess of the metabolic needs, and Dr Conby Robinson a few years ago supplied us with objective reasons for this.

He found in his patients with Graves' disease that the arteriovenous oxygen difference was lower than in the normal. The rapidity with which the blood flowed through the capillaries prevented the organism from taking out as much oxygen per unit of time. Does that not indicate that the speed of the circulation is excessive and out of proportion to the needs in the classic case of Graves' disease? It is possible that this overactivity of the circulation does not occur in the older age group. It may be very well worth while to study it, Dr Evans. In these patients the pulse rate is much slower than one would anticipate from the basal metabolism. There is a basal metabolism of +30 or 40 associated with a pulse of 70. I have often wondered whether or not it might be due to the fact that their vegetative nervous system may be less unstable with less overactivity of the circulation, the arteriovenous oxygen difference would be more nearly normal, and therefore the pulse rate slower. In the young people we find the reverse—the pulse rate rapid, out of proportion to the basal metabolism. Have you any comments on that?

DR EVANS: That has been our observation, the older individuals with the toxic adenoma certainly have slower pulse rates.

DR JANET TRAVELL: I want to turn to another subject. Dr Gold spoke about the use of digitalis in auricular fibrillation if quinidine failed. I wonder whether he would state whether he gives them simultaneously, or whether he stops the quinidine, or whether he allows an interval to elapse between the starting of the digitalis. Another question is digitalis ever dangerous in any of the cardiac manifestations or complications of thyrotoxicosis?

DR GOLD: It is not well to give large doses of quinidine and digitalis together. The two exert a synergistic action which is injurious. The evidence comes from animal experiments and isolated experiences in man. It would take too long to go into the details of the mechanism. When one has given very large doses of quinidine without avail, the thing to do is to discontinue for twenty-four hours, because most of the quinidine is eliminated within that period of time, then digitalize the patient as though he had had no quinidine. On the other hand, if one gives digitalis first, and in fairly full doses, it is better to wait several days before one gives large doses of

quinidine because of the fact that it takes so much longer for the elimination of the digitalis.

As to the toxic effects of digitalis in thyroid disease, up to 1916, I think, in this country it was a pretty general practice to give digitalis to most patients with thyrotoxic disease in an endeavor to control the rapid heart rate. Many of them were poisoned in that way. Out of this arose the belief that digitalis is injurious to the patient already toxic with Graves' disease, a phenomenon similar to the synergistic effect of two poisons. Some have placed the toxic action of the two factors not upon the heart, but upon the brain, resulting in edema of the brain. The evidence is far from satisfactory that ordinary digitalizing doses of digitalis exert a greater toxic effect in the hyperthyroid than in the non-hyperthyroid patient.

DR WHEELER: I would like to ask Dr Shorr whether he believes digitalis is useful in auricular fibrillation due to Graves' disease.

DR SHORR: I think there is no difference between Graves' disease and any other condition in regard to the indications for the use of digitalis. The same factors, auricular fibrillation and failure, are indications for its use, and I believe it has the same effectiveness, with this to be remembered if one gives a patient with Graves' disease digitalis, one should not expect that the heart rate will come down to 70, where one may expect a similar dose to bring it in a person without Graves' disease. The factors which are in control of the pulse are fundamental, they are the requirements of the body. To expect, therefore, that digitalis will do more in case of auricular fibrillation than it will do in a patient with Graves' disease whose pulse rate remains at 100 or 120 without fibrillation is, of course, asking too much.

DR WHEELER: I am interested to hear you say that, because one frequently hears the statement that digitalis is ineffectual in controlling the heart rate in auricular fibrillation in Graves' disease but it has been our observation on the Medical Service in the hospital here that that statement is not true. The rate is not slowed as much as in individuals without Graves' disease, but it is definitely slowed.

DR SHORR: It is like asking digitalis to prevent the expected rise in pulse rate on climbing stairs.

DR GOLD: It is, however, possible, by large doses of digitalis, to block auriculoventricular conduction by a direct extravagal action, and thus reduce the heart rate to fairly low levels. Strictly speaking, this is not a physiologic slowing. It is analogous to heart block by digitalis in a normal person.

DR SHORR: do you mean to convey the idea that

heart failure with auricular fibrillation resulting from Graves' disease responds as well to digitalis as heart failure from other causes?

DR. SHORR: No, in that you have in the non-Graves' individual only a normal load. In the case of Graves' disease you have an unusual load whose diminution is dependent not on the reaction to digitalis but on the reaction to the general therapeutic regime.

QUESTION: In auricular fibrillation do you prefer to withhold quinidine until after surgical intervention?

DR. SHORR: I do not think that quinidine is contraindicated before operation, but I think the possibilities for normal sinus rhythm persisting are distinctly less than after operation.

DR. TRAVELL: Why do thyrotoxic patients go into congestive failure? Is there any evidence that a vitamin B<sub>1</sub> deficiency may act as a precipitating factor in this type of failure? This might be suggested by the known increased metabolic needs for this vitamin and also by the paroxysmal or episodic character of its course.

DR. EGGLESTON: I should like to ask this question: do you think that patients with Graves' disease are as responsive to cardiac failure therapy as the nonhyperthyroid cardiac patient?

DR. CATTELL: Dr. Stewart, would you express your view of that?

DR. HAROLD STEWART: In my experience they recover from heart failure just about as readily as any other patients. It may take them a little longer to become free of congestion.

DR. GOLD: Would you agree to that, Dr. Eggleston?

DR. EGGLESTON: I would say, that before the common use of iodine in detoxifying these patients, it was my impression quite definitely that their likelihood of response to such measures as you have outlined minus the iodine was somewhat less, rather significantly less, than in the patients without hyperthyroidism. Frequently one would not get satisfactory clinical effects, and one would not get satisfactory slowing with digitalis even of the fibrillating heart. I have seen a good many cases where patients have been poisoned by the efforts to slow the heart in the face of thyrotoxicosis that was not recognized, but since the advent of iodine, then I agree with you fully that they respond well. In fact, I question sometimes whether we need the digitalis or the diuretic. Many times if they are simply put at rest in bed and given the usual preparatory treatment of the thyroid with iodine, a high caloric diet, and restricted fluid intake and restricted salt, they will get along with their heart failure and recover without the other methods; not that I advocate that as a procedure, because

I think the other methods added to it hasten restoration.

DR. GOLD: These views concerning the response of the hyperthyroid patient with failure to the usual methods of therapy are extremely interesting. I believe that the more generally accepted view is that patients with hyperthyroidism developing heart failure are likely to be fairly resistant to treatment, and that one of the points which leads one to suspect that hyperthyroidism may be the cause of the failure is that one fails to get very far with the usual methods of treatment. But would you care to say something else about that?

DR. STEWART: Iodine is an essential part of the treatment.

DR. GOLD: As I see it, then, there is no real difference of opinion here; if you treat them with iodine at the same time the response of the failure is very good and much the same as nonhyperthyroid patients. Is that it?

DR. STEWART: I think we might expand a little more on the slowing by digitalis at this point. I think that there is too much emphasis on the point that you cannot slow the fibrillator in hyperthyroidism. You can slow them down fairly well and in many instances even without iodine you can get them down to a fairly low level. It may be somewhat higher than the usual level for other patients. It may take somewhat more drug than the average dose for another patient but it can be done. I have seen no toxic effects from slowing the ventricular rate in these fibrillators.

DR. EGGLESTON: May I speak on that? I believe the reason Dr. Stewart has not seen toxic effects is that Dr. Stewart is skilled in the use of digitalis. We certainly see the toxic effects of digitalis outside an institution such as this. We encounter them in consultation where the physician has not known enough about digitalis to handle it as expertly as you or Dr. Gold can handle it. The average person does not get the slowing in any degree adequate in his estimation to restore a patient unless he uses the iodine, nor does the patient's clinical picture change enough to make him feel satisfied, so he goes ahead and pushes the digitalis a bit too far. I think nausea and vomiting and some of the other toxic symptoms are much commoner outside of teaching institutions than they are here. In other words, what I am trying to say is that you don't induce them because you know better, whereas a good many others, not realizing the situation, do induce digitalis intoxication in their efforts to slow the fibrillating or nonfibrillating heart in the presence of an active thyrotoxicosis.

DR. JOHN B. DEITRICK: May I take up this point? I will differ with Dr. Stewart. Consider

the patient with auricular fibrillation, a ventricular rate of 140, a basal metabolism of +60, and without iodine. I would be greatly surprised if you could lower the ventricular rate more than 10 or 15 beats a minute with digitalis alone, but if you add iodine you can certainly lower it to a great extent in a week or ten days. The iodine, in my experience, is very important. I have never been able to control the ventricular rate with digitalis alone. At the end of a week or ten days with iodine the digitalis works very well. Do you agree with that?

DR STEWART: I think we can show charts where the digitalis alone has caused marked slowing.

DR GOLD: Is it possible that the difference between these two views may be due to the fact that we are talking about different degrees of hyperthyroidism and that patients with extremely high basal metabolisms, who are fairly sick, are likely to be more resistant to digitalis than those with milder grades of hyperthyroidism?

DR DAVID P. BARR: Dr. Gold, may I make a remark about this? It seems to me that to some extent there has been too much emphasis laid on the strict parallelism between basal metabolic rate and pulse rate. In general there is a surprising correlation, and if you take a group of patients you will find that the pulse rate in crease corresponds fairly closely to the basal metabolic rate increase. On the other hand, if you watch an individual patient over a period of time you will find the greatest variation in the pulse rate. I have seen patients who had a basal metabolic rate of +50 and 60 who had a basal pulse of 80 or less, sometimes as low as 75. On the other hand, those same patients in bed on the ward might have pulse rates around 120 to 130.

The idea of controlling all the variations of pulse rate in a patient like that with digitalis is like saying that you are going to control the rate of a man who runs a race with digitalis. It cannot be done. You cannot make the heart rate come down to the desired level by giving digitalis before the race is run. I would agree with Dr. Eggleston that before we used iodine in these patients with decompensation and irregular rhythm digitalis resulted in almost no slowing at all.

DR GOLD: How about those with auricular fibrillation?

DR BARR: It also applies to them, particularly if advanced decompensation is present. Digitalis often fails to reduce their ventricular rate significantly in the presence of thyrotoxicosis.

DR EGGLESTON: I think the situation is analogous to that during active infection. During infection the use of heart rate as a guide to digitalization is futile. There is the toxic in-

fluence which is driving the heart which is more potent than the effect of the digitalis on the rate.

DR GOLD: There is one other point here which perhaps we have partly answered, and that is regarding the sensitivity of the hyperthyroid patient to the toxic actions of digitalis. It is generally stated that the patient with Graves' disease is more sensitive to the toxic effects of digitalis than the non-Graves' patient. Is there anything in that, Dr. Eggleston?

DR EGGLESTON: Not in my experience, Dr. Gold. I think he responds just about the same as the patient without Graves' disease so far as his likelihood of developing toxic symptoms is concerned.

DR GOLD: Yet you did say that, by and large, you encounter more toxicity among patients with Graves' disease treated with digitalis than you do among those who don't have Graves' disease.

DR EGGLESTON: I think it is because of the failure to recognize the fact that thyrotoxicosis antagonizes the effect of digitalis on the rate.

The doctor using rate is a crude guide, pushes digitalis into the toxic range. If he followed those patients by some other means the chances are he could avoid toxicity. Perhaps Dr. Stewart would say whether the effect on the T wave or on conductivity in thyrotoxicosis could be used.

DR GOLD: Is there any difference in the tolerance of the Graves' patient to digitalis by any method of measurement?

DR STEWART: I don't think so. I have not observed any differences, and I don't know of any good experimental work bearing on it.

DR GOLD: There are, nevertheless, the statements in the literature, made by Plummer and others warning against the toxic action of digitalis in Graves' disease, especially a toxic action on the central nervous system causing edema of the brain. Plummer stated that the patients do badly with digitalis even in the presence of an apparently beneficial action on the heart.

DR BARR: What Plummer showed was that during the period in which patients had been routinely digitalized preoperatively, the mortality from thyroidectomy was higher than it had been in the years when they were not so routinely digitalized.

On the other hand, it must be remembered that in this series complete digitalization was attempted and that patients received a full dose, whether they needed it or not. They must have been digitalizing a great number of individuals who would have fallen into the normal range in whom we now believe digitalis may be actually harmful. I never felt that that demonstration of Plummer's was any argument against digitalizing a thyrotoxic patient who was decompensated or

who had some trouble, such as an irregularity of the heart, which might develop into decompensation.

DR. McKEEN CATTELL: I believe that Dr. Gold and Dr. Modell have some observations on patients with fibrillation which bear on the problem of slowing in Graves' disease.

DR. GOLD: There are two ways in which the heart in the patient with fibrillation slows as the result of digitalis. One is a reflex increase in vagal tone from the improvement of myocardial function. The other is an extravagal mechanism in which the slowing is due to the direct action of digitalis on auriculoventricular conduction. In Graves' disease the reflex mechanism may be inactive. Therefore, the digitalis can slow the rate by the remaining mechanism, namely, the direct action on the auriculoventricular conducting system. But this requires a very much larger dose, sometimes twice as much as for the "vagal" slowing. Such large doses under any conditions are likely to give rise to many cases of poisoning.

DR. CATTELL: The patient with Graves' disease is subject to paroxysms of auricular fibrillation. What do we do about that?

DR. EGGLESTON: I used to treat them vigorously. I don't any more, because most of those paroxysms seem to be self-limited and innocuous. If, after subtotal thyroidectomy, the patient continues to fibrillate or if he develops recurrent attacks of fibrillation, I am inclined, provided the patient is still under iodine, to resort to the use of quinidine.

DR. GOLD: Your inclination, then, is not to deal with the paroxysm of fibrillation directly before operation.

How about a case of this kind: A patient is in the ward with auricular fibrillation, being prepared for operation. He is going to be there for two or three weeks and during that time he is having attacks of auricular fibrillation once or twice daily. They last half an hour or an hour. Are you inclined to let him be, or would you do something about the attack?

DR. STEWART: As you describe it, I would do something. If the attacks last long enough, several hours, I think I would digitalize the patient in order to reduce the marked changes in ventricular rate, even though the heart might still go in and out of fibrillation. I do not make any attempt to stop the attacks with quinidine until a certain length of time after operation. Even in these cases I also use digitalis at the same time.

DR. EGGLESTON: How long do you wait?

DR. STEWART: A variable period. I usually wait several weeks. They sometimes return to a normal rhythm spontaneously in two or three months after operation.

DR. EGGLESTON: That brings up a moot point, moot in my mind anyway, as to whether we are running risks of embolism from intra-auricular thrombi in the patient who has been allowed to remain too long in fibrillation or who has reverted to sinus rhythm. I have my own ideas about that.

DR. GOLD: Let us have them.

DR. EGGLESTON: My own ideas are that the transition from fibrillation into a sinus rhythm does not materially enhance the likelihood of embolism.

DR. GOLD: I take it, therefore, that in changing fibrillation to normal rhythm, from the standpoint of danger, you regard it as a matter of indifference whether the fibrillation is one day old or five weeks old?

DR. EGGLESTON: Yes.

DR. GOLD: We have here two different answers to the same question. Dr. Eggleston would use quinidine to control the fibrillation while Dr. Stewart would use digitalis.

DR. EGGLESTON: Just a minute, Dr. Gold. I think that is simply because Dr. Stewart and I are answering the same question from two different points of view. He was talking of fibrillation with heart failure, I think; I was dealing with the problem of fibrillation per se without heart failure. If there were no heart failure present I would not use the digitalis. If there were heart failure I would proceed just as Dr. Stewart and use the digitalis.

DR. STEWART: Whether there was failure or not, I would use digitalis.

DR. GOLD: I think the record is clear on this point. We have two different answers to the same question. That's common enough. So it is also in the literature; some people treat the fibrillation per se, regardless of failure, with digitalis, in the hope of obtaining a slower rate each time the heart goes into fibrillation; others try to control recurrence of attacks with quinidine.

This brings up another point. In a patient who is subject to paroxysms of auricular fibrillation with a very rapid rate, let us say a ventricular rate of 180 a minute, is it your experience that the rate is slower if the patient is kept digitalized?

DR. EGGLESTON: Dr. Stewart was just discussing that question.

DR. GOLD: Dr. Stewart said yes, but I would like to know what you think.

DR. EGGLESTON: Frankly, that has not been my experience.

DR. GOLD: It has not been mine either. We digitalize these patients with average doses, and in spite of it every time an attack of fibrillation pops up, the ventricular rate seems to be as fast as before we gave the digitalis. It is probably largely a matter of dosage.

DR EGGLESTON That has also been my experience

DR GOLD How much quinidine do you give, Dr Eggleston, to prevent attacks of auricular fibrillation in this group of patients?

DR EGGLESTON I usually begin with an initial dose of 0.3 Gm five times per twenty-four hours, as evenly spaced as possible, and work from there up until I find a dose which for that patient suffices to control and produces no toxic symptoms. You, yourself, have mentioned your experiences with very high doses without detriment to the patient. I think the drug has to be given with caution, and only on the basis of trial in the individual patient.

DR GOLD The fact that the patient has hyperthyroidism presents no special problems?

DR EGGLESTON Not in my opinion.

DR GOLD What dose of digitalis do you use to control the fibrillation, Dr Stewart?

DR STEWART If I were going to digitalize I would use 1.8 Gm in twenty-four hours, and maybe a maintenance dose of 0.2 Gm. As I said, in these patients it may take a little more than in other patients.

DR DEITRICK Is there any evidence that the heart suffers permanent damage from hyperthyroidism? Does the presence of auricular fibrillation make it necessary to prolong the period of bed rest and iodine in preparation for operation?

DR GOLD You mean structural damage?

DR DEITRICK Yes.

DR GOLD Is there any?

DR EGGLESTON I wish the pathologists would tell us. The clinical evidence is against permanent damage, because even most of these patients who have been in severe congestive failure during hyperthyroidism return to clinically normal individuals following adequate preparatory treatment and adequate subtotal thyroidectomy. It seems to be a reversible intoxication rather than structural damage. Yet there are statements in the pathologic literature which suggest that there may be some structural damage there. The late Dr Ewing, some years ago, refused to give me a categorical answer to this question. He said that he did not know.

DR STEWART In experimental work with thyrotoxin feeding to animals, they have not been able to demonstrate any morphologic changes. No doubt there must be a functional derangement from which the heart is unable to recover completely, although you are not able to distinguish that heart from another under the microscope.

DR TRAVELL To come back to a point brought up earlier, I believe that Dr Stewart said that he would digitalize a patient and then give him quinidine, isn't that so?

DR STEWART If I were going to give a patient quinidine, I would slow the rate down first by digitalis.

DR TRAVELL I wonder if there are any dangers in the administration of quinidine to a patient who has received large doses of digitalis?

DR STEWART I don't know of any with therapeutic amounts of digitalis.

DR EGGLESTON Wasn't it you who brought out that question?

DR TRAVELL It was Dr Gold.

DR GOLD We found that in animals quinidine and digitalis often acted synergistically to produce toxic effects on the heart. After large doses of digitalis, otherwise safe doses of quinidine sometimes caused cardiac standstill.

DR CATTYL There is also evidence of antagonism between these two drugs.

DR EGGLESTON I think certainly that clinical experience does not serve to point strongly to any inherent danger in the simultaneous use or sequential use of these two agents, quinidine and digitalis.

DR MODELL Since digitalis tends to maintain auricular fibrillation, isn't that a theoretic objection to its use together with quinidine?

DR EGGLESTON I think that is purely theoretic. I don't believe it is borne out by clinical experience. In the patients who have been digitalized the sinus rhythm can be re-established just about as well as in those who never had any digitalis.

DR STEWART There is a group of patients who do not respond to quinidine and in whom digitalis will prevent attacks of fibrillation.

DR EGGLESTON I am very glad you brought that point out, because in theory digitalis should enhance the auricular fibrillation, and there are some patients in whom it does that.

DR GOLD I may direct your attention to the fact that a large proportion of the accidents from quinidine reported in the literature occurred in digitalized patients, and also to the few reports of cardiac arrest from quinidine in digitalized patients. I have seen one such case. It resembled the thing we sometimes see in the dog.

### Summary

DR GOLD We may now briefly summarize the essential points that have been brought out in the conference this morning.

It is perhaps not strictly accurate to regard the cardiovascular disturbances of Graves' disease as complications, but rather as manifestations of the disease, because in the vast majority of cases the heart and the circulation are involved as part and parcel of the complex manifestations of Graves' disease itself. In some of the cases, particularly the older age group, nervous symp-

toms are at a minimum and the cardiovascular signs outstanding. Unless one bears this in mind one is likely to overlook cases of Graves' disease. These are sometimes referred to as "masked hyperthyroidism." The clinical problems are heart failure and the common disorders of rhythm, premature contractions, auricular fibrillation, auricular flutter, and paroxysmal tachycardia. The characteristic of these disorders when due to Graves' disease is the almost complete reversibility in most cases, even in extreme grades. The treatment is essentially the same as when these occur in patients without hyperthyroidism. A significant fact is, however, that the cause can be attacked through at least the partial cure of the Graves' disease itself. This is accomplished by the combination of iodine therapy and subtotal thyroidectomy. Most cases require subtotal thyroidectomy after suitable preparation with iodine administration. The outlook for medical treatment is now improved with the new drug, thiouracil. Cardiovascular disturbances of Graves' disease tend to be more resistant to the customary therapeutic agents. Patients require more digitalis than most patients to slow the ventricular rate in auricular fibrillation, and often the slowing is not as marked. This drug rarely abolishes the auricular fibrillation. Its effect in relieving the congestive heart failure of hyperthyroidism is also usually incomplete. There is no good evidence that patients with Graves' disease are more susceptible to the toxic action of digitalis.

Quinidine is effective in abolishing the auricular fibrillation, but there is difference of opinion as to when it should be used. In view of the fact that prior to operation it is difficult to maintain a normal rhythm even if it is restored by quinidine, some recommend that it be withheld until after thyroidectomy. Others, however, hold the view that a normal rhythm may be restored and maintained with quinidine in most cases if large enough doses are given—10 grains every two

hours until the rhythm is normal (usually 30 to 60 grains in all). The indications are that these large doses are safe, although the view is held by some that they are more likely to cause toxic effects. The sinus tachycardia of Graves' disease does not respond to digitalis or quinidine. Iodine will slow it markedly, but the effects are not likely to be permanent, and in the end these patients are likely to come to operation before a lasting reduction of the pulse rate is achieved. The combined use of quinidine and digitalis, and the dangers of the combination were debated.

The effects of Graves' disease and myxedema on the circulation are opposite; in Graves' disease the pulse is rapid, the cardiac output is inordinately high, the arteriovenous oxygen difference is small, and the peripheral blood flow is high, whereas in myxedema the pulse is slow, the cardiac output is low, the arteriovenous oxygen difference is high, and the peripheral blood flow is low. These are reversed by appropriate treatment: iodine or thiouracil and thyroidectomy in Graves' disease, and thyroid medication in myxedema. The "myxedema heart" as a clinical entity responsible for cardiovascular symptoms is uncommon. The probability is that many of the cases presenting clinical cardiovascular disease in myxedema have concomitant arteriosclerosis. Thyroid materials must be used with caution in myxedema. Small doses, of the order of 30 to 60 mg. daily, usually suffice to relieve the symptoms of myxedema without the danger of putting an excessive load upon the heart through the rapid elevation of the basal metabolic rate. Heart failure as the result of myxedema is rare. Certain disorders of rhythm, however, occur, and these are treated by digitalis, quinidine, or mecholyl, as the need may be, in much the same way as in nonmyxedematous patients. They are sometimes abolished by adequate treatment with thyroid material.

The details of these treatments have been discussed.

#### UNEMPLOYMENT INSURANCE PAYMENTS NOW BASED ON 1943 WAGES

Since June 5, 1944, when the new unemployment insurance "benefit year" began, benefits are paid only on the basis of earnings in the calendar year 1943, Milton O. Loysen, Executive Director of the Division of Placement and Unemployment Insurance, has pointed out.

"Job-seekers who have exhausted their benefits based on earnings in 1942, and who worked in 1943, may file new claims on or after June 5," said Mr. Loysen.

"Persons who have not claimed benefits in the benefit year June 7, 1943, to May 31, 1944, and who worked in covered employment during 1943 have been able to file a claim against their 1943 earn-

ings any time since May 16, 1944. Unemployed workers currently receiving benefits and who remained continuously unemployed until June 4 will experience no lapse in payments if they remained eligible through June 5, provided they are eligible on the basis of their earnings in 1943. They must, of course, report to the local office as directed and file a new claim.

"If a claimant exhausted his benefit rights, based upon his wages in 1942, and the last day he was entitled to benefits was any day up to or including June 3, he must file a claim on or after June 5 and serve a new waiting period in order to obtain benefits," concluded Mr. Loysen.

# Case Report

## MANIFESTATIONS OF HEMOLYTIC PHENOMENA AND INFECTIOUS MONONUCLEOSIS IN A CASE OF LYMPHATIC LEUKEMIA

FREDERIC FELDMAN, M.D., and JACOB J. YARVIS, M.D., Brooklyn

CASES of hemolytic jaundice associated with leukemia have been reported by several authors.<sup>1,2,3</sup> We are reporting a case of this type complicated by evidence of infectious mononucleosis.

### Case Report

The patient, L. B., a boy of 18 years, was admitted to Kings County Hospital on September 18, 1939. He complained of midabdominal pain of five weeks' duration, bleeding from the gums, and passing of dark urine. At the onset he experienced persistent severe ache in the left upper abdomen, occasionally associated with epiploids of colic in the mid-abdomen. He then noticed increasing pallor and he began to complain of marked general weakness.

There was no previous history of jaundice or of his family. His blood count on admission was: hemoglobin 12 gms. per 100 cc., red cells 4,500,000, white cells 20,600, hemoglobin 73 per cent. On October 2 a bone marrow study showed 14 per cent lymphocytes, of which 9 were atypical, polymorphonuclears, 1 per cent, bands, 13 per cent; metamyelocytes, 4 per cent, eosinophils, 1 per cent, promyelocytes, 2 per cent, and normoblasts, 1 per cent. These findings showed some maturation defect of the granulocytes and marked erythroblastosis. There was an increase in lymphocytes, and some of these were atypical and were believed to be the type seen in infectious mononucleosis. Microspherocytosis of the red blood cells was noted in the bone marrow smears.

The gums were heaped and spongy and bled easily to the touch. The mucous membranes of the mouth were pallid. Small discrete glands, about the size of a hazelnut, were felt in the posterior cervical region, the axillae, and the inguinal regions. The lungs were clear. There were systolic murmurs heard at the apex and at the pulmonic area.

On abdominal examination there was tenderness

in the right upper quadrant. The spleen was enlarged and was felt six fingerbreadths below the costal margins. On October 13 the urine was negative for bile although the patient was still jaundiced.

At this time the boy's mother and his sister and brothers were examined. Their spleens were not palpable, they were not icteric, and their blood smears failed to show any evidence of familial icterus.

On October 17 the fragility test was repeated with washed cells. Hemolysis began at 0.54 per cent sodium chloride and was complete at 0.38 per cent.

Intravenous cholecystography revealed a well-filled gallbladder of normal size and function, with no stones.

On November 5 the blood count was: red cells, 2,800,000, white cells, 8,900, and hemoglobin, 50 per cent.

On November 8, blood smear revealed: polymorphonuclears, 25 per cent, bands, 11 per cent;

analysis showed free hydrochloric acid 45 and combined hydrochloric acid 88.

Fragility test showed hemolysis beginning at 0.50 per cent sodium chloride and complete at 0.42 per cent sodium chloride. A heterophile test was positive in 1:1,024 dilution on September 21.

The blood findings suggested the diagnosis of acute infectious mononucleosis and hemolytic icterus. The blood smears were examined by

transfusion of 500 cc. of blood was given without untoward reaction. Subsequent transfusions were difficult because of the presence of auto-agglutination and rouleau formation.

On September 27 the blood count was: red cells 4,500,000, white cells 20,600, hemoglobin 73 per cent. On October 2 a bone marrow study showed 14 per cent lymphocytes, of which 9 were atypical, polymorphonuclears, 1 per cent, bands, 13 per cent; metamyelocytes, 4 per cent, eosinophils, 1 per cent, promyelocytes, 2 per cent, and normoblasts, 1 per cent. These findings showed some maturation defect of the granulocytes and marked erythroblastosis. There was an increase in lymphocytes, and some of these were atypical and were believed to be the type seen in infectious mononucleosis. Microspherocytosis of the red blood cells was noted in the bone marrow smears.

The heterophile reaction was repeated and was again positive in dilution of 1:512. The Davidson

test was specific for infectious mononucleosis.

On October 6 another transfusion was given; this was followed by severe epistaxis. Bleeding time was four and a half minutes. The spleen was now larger and was felt six fingerbreadths below the costal margins. On October 13 the urine was negative for bile although the patient was still jaundiced.

At this time the boy's mother and his sister and brothers were examined. Their spleens were not palpable, they were not icteric, and their blood smears failed to show any evidence of familial icterus.

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On November 8, blood smear revealed: polymorphonuclears, 25 per cent, bands, 11 per cent;

From the medical services of Dr. Henry Wolfer and Dr. Bernhard A. Fedde, Kings County Hospital, Brooklyn, New York.

lymphocytes, 63 per cent (12 atypical); mononuclears, 1 per cent; and basophils, 1 per cent. The red blood cells again showed microspherocytosis and 4 per cent reticulocytosis.

Because of investigations up to November 15, 1939, it was believed that this case was one of congenital hemolytic icterus aggravated to crisis by an infectious mononucleosis. The patient continued on a downhill course and because of the hemolysis and hemorrhagic episodes, he was transferred to another hospital, where a splenectomy was done. The post-operative course was satisfactory except that healing of the wound was delayed. The hemorrhages and the purpuric manifestations diminished and the hemoglobin and red cell count improved. He was given a transfusion at this hospital and, as before, difficulty was encountered because of the autoagglutination and rouleau formation, and also because of the presence of anti-O agglutinins. An explanation of these reactions and an interpretation of the immunologic features were presented in a separate paper by Wiener *et al.*<sup>4</sup>

An abstract of the pathologic report\* of the spleen follows.

The spleen weighed 2,000 Gm. There was an infarcted area 9.5 by 4 cm. The usual cyto-architecture was difficult to make out because of increased cellularity of the organ. Malpighian bodies were relatively diminished and widely separated. Where present, they showed large germinal centers with but a narrow rim of round cells in them. With a Perles' stain, blue granules of hemosiderin were seen in many of these large cells. There were areas of marked congestion of the splenic pulp in which many of the cells filling the sinusoids were immature red blood cells and white blood cells. These findings were regarded as consistent with a diagnosis of hemolytic icterus.

The patient was sent home, continued under observation, and given two transfusions. He began to have swelling of the abdomen, with increasing purpuric manifestations. His anemia and white blood cells increased and from his symptoms and findings it became increasingly evident that he was suffering from a lymphatic leukemia.

On January 6, 1940, the white cell count was 101,000. By February 12, 1940, his blood count was as follows: hemoglobin, 50 per cent; red blood cells, 2,240,000; white blood cells, 253,000; platelets, 65,000; neutral myelocytes, 2 per cent; polymorphonuclears, nonsegmented, 2 per cent; polymorphonuclears, segmented, 1 per cent; lymphocytes, 93 per cent; lymphoblasts, 2 per cent; normoblasts, 6 per 100 white cells; reticulocytes, 11 per cent.

A bone marrow smear showed marked infiltration with lymphocytes. A heterophile reaction was now positive at 1:128. There still were microspherocytosis and reticulocytosis.

On March 1, 1940, the patient was readmitted to Kings County Hospital, where examination revealed a progressive state of cachexia, severe pallor, icterus of sclera, and moist and clammy skin. There were still the hazelnut-sized glands in the groin, axilla, and cervical regions. The chest revealed moist rales at both bases. The abdomen was increased in size, with a left rectus scar. The liver edge was felt in the right iliac fossa and was tender. Edema extended up from his ankles to his knees.

The blood count was: red blood cells, 2,000,000;

white blood cells, 230,000; hemoglobin, 35 per cent; platelets, 100,000; segmented neutrophils, 12 per cent; nonsegmented neutrophils, 4 per cent; small lymphocytes, 66 per cent; monocytes, 3 per cent; lymphoblasts, 15 per cent.

The heterophile reaction now was negative. Red blood cell count still showed microspherocytosis.

The patient lapsed into coma and expired on March 21, 1940.

## Discussion

This patient was admitted to the hospital with evidence of hemolytic icterus. He was jaundiced and his spleen was enlarged. The blood smears showed microspherocytosis and reticulocytosis. The red blood cell fragility was increased. Autoagglutination, a finding not uncommon in hemolytic icterus, also was present. The urine showed 2 plus bile but this was regarded as due to backing up of bile in the biliary radicles or hepatic cells because of the delivery of excessive amounts of blood pigment to the liver. A month after admission there was no bile in the urine, although the patient was still jaundiced. The blood smears showed atypical lymphocytes which were thought to be the type seen in infectious mononucleosis. Heterophile tests were repeatedly positive, except toward the end of the disease. The Davidson exclusion test, considered specific for infectious mononucleosis, was positive. There were present also purpuric phenomena which at the beginning were thought to be due to the infectious mononucleosis. Because of the downhill course of the patient, increasing anemia, and persistence of hemolysis for months, splenectomy was resorted to. Following this, for a short time, the hemolytic phenomena and blood findings showed slight improvement, only to recur with increasing severity.

Further studies, such as blood marrow smears and blood studies after operation, began to reveal the picture of a lymphatic leukemia.

## Conclusion

A case of lymphatic leukemia is reported in which there was evidence of hemolytic icterus before a diagnosis of lymphatic leukemia could be made. As in the cases of Haden<sup>1</sup> and Brill,<sup>2</sup> splenectomy was performed in the early stages of the disease. In our case, also, there were repeated positive heterophile reactions in high dilution and a Davidson exclusion test was positive. Although the occurrence of these positive tests indicated a diagnosis of infectious mononucleosis, one cannot rule out the possibility that they may have been caused by leukemia. The finding of such reactions by other investigators would, of course, lend credence to this view.

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\* Courtesy of Dr. Max Lederer.



# Medical Indemnity Insurance

*Recent progress of plans for voluntary medical indemnity insurance makes it desirable to publish in the JOURNAL, from time to time, material bearing on this or a related subject. The installment which follows is quoted from an article by C. C. Curtis, M.D., Syracuse, New York.—Editor*

WHETHER we like it or not, medicine is in a transition period. We must face this idea of change. A feeling of unrest is in the air and men's minds are in a ferment. It is proving to be a time of radical change always. With dictatorships tripping men's minds, we must be prepared for repercussions in our manner of living and in the practice of our profession.

If this is true—and I think it is self-evident—what are we going to do about it? Are we going to cooperate and exert some influence in shaping these forces? Or are we to stand aside, do nothing, and have something foisted on us that we do not want?

relationship between the patient and the physician and any scheme that disrupts such a relationship, I believe, strikes at the very base of good medical care. The reason for this is that under our present system of private medical practice the objectives of both the patient and the physician are the same. That objective is to return to good health. The physician wants to return to work and the enjoyment of life, and the patient certainly wants to be satisfied, and pay his bill and get back to work. Both physician and patient lose their interest in getting well and increased morbidity is bound to result.

A second criticism of this type of State medicine has to do with the fact that the recompense is so small per patient that a large number of patients have to be seen in order to provide the practitioner with an adequate income. Quality of service has to be sacrificed to quantity. The answer is obvious. To do his work properly the physician must have time not only to make a diagnosis but to exercise his prerogative as friend, counselor, and guide. He must have time to become acquainted with the total personalities of those under his care, and this has always been impossible under any form of contract practice.

Third, under a system of State medicine another abuse would rapidly develop. The patient would be encouraged to expect more from the State and the State would be expected to pay more for the patient. Caught in this vicious circle, the State would be unable to pay more for the patient and the patient would be unable to expect more from the State.

become more closely knit. He would become merely a bystander.

All physicians would be put on the defensive. They would be caught between the desire of the patient for care and benefits only to be gained by being sick and the desire of the political bureaucratic administration to get results and get the beneficiary back to work. The harassed practitioner, to protect himself, would find it necessary to order all sorts of tests, many unnecessary but all expensive to complete the record and protect himself from being overwhelmed. Every man's hand would be against him and the practice of medicine would cease to be an art, rather degenerating into a series of laboratory tests to find out not what ails the patient but rather to prove whether the patient is a patient or a malingerer.

Fourth, practice would become slovenly. Proper diagnosis would not be made and the patient would either have to be turned over for a mechanized check-up or merely symptomatic treatment. The latter in State schemes is only too often the case. In England under State medicine the people are rapidly becoming drinkers.

A fifth criticism of this type of State medicine is bound to be costly. The cost of such a system is first started, it would be bound to increase as an extensive bureaucratic edifice was built up to administer its workings.

Now, briefly, let us consider the possibility of the second system that I mentioned earlier. It is sometimes erroneously called "social medicine," but, correctly, "sickness indemnity insurance." This form is more than a distinct probability. It is already here. . . . Arrangements are made for the easy payment of premiums. The annual indemnity is limited so that the patient watches his withdrawal from his yearly allowances, thus putting a curb on morbidity that often is encouraged by most State schemes of unlimited service. If the patient has to budget his insurance benefit he is not apt to run to his doctor for every little sickness.

Certainly we can have no objection to this plan, which gives the moderate income group an opportunity to provide itself with medical care on a self-respecting basis. . . . It is the American way, as it tends to maintain the self-respect of the individual because he is doing something for himself. It fosters individualism and a sense of responsibility. . . . We all feel it.

Let us consider the various advantages of a paid physician—at least for the great bulk of the population—and stressing the advantages of sick-

population and tend to combat the various cracked-pot ideas and isms that now seem to plague us.

# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman (428 Greenwood Place, Syracuse); George Baehr, M.D., and Charles D. Post, M.D.*

## Poliomyelitis Teaching Day in Elmira

A TEACHING Day on poliomyelitis was held at the Mark Twain Hotel in Elmira on July 26, under the auspices of the medical societies of the counties of Allegany, Chemung, Schuyler, Steuben, and Tompkins, the Medical Society of the State of New York, and the New York State Department of Health.

The afternoon meeting was called to order at 3:00 p.m. by Dr. George R. Murphy, regional chairman in pediatrics. Dr. James E. Perkins, Director of the Division of Communicable Diseases of the New York State Department of Health, spoke on "Epidemiology of Poliomyelitis." Dr. A. Clement Silverman, professor of clinical pediatrics at Syracuse University College of Medicine and Director of the Communicable Disease Bureau of the Syra-

cuse City Department of Health, delivered a lecture entitled "Clinical Features—Pathology, Diagnosis, and General Treatment." General discussion followed the lectures.

After dinner at 7:00 p.m. in the Hotel the evening meeting was called to order at 8:30 p.m. by Dr. William R. Phillips. "Physical Therapy in the Acute and Convalescent Stages" was the first lecture, delivered by Dr. William B. Snow, associate in medicine at the College of Physicians and Surgeons of Columbia University. Dr. John C. McCauley, Jr., associate professor of clinical orthopaedic surgery at New York University College of Medicine, then spoke on "Orthopaedic Measures." These lectures were followed by general discussion.

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## RESEARCH FELLOWSHIPS AWARDED BY NEW YORK ACADEMY OF MEDICINE

Three of four fellowships entrusted to the committee on medical education of the New York Academy of Medicine have been awarded. The fellowships were provided by Charles Mayer of New York City and consist of \$2,000 each. They went to Dr. Harry Goldblatt, associate director of the Institute of Pathology, Western Reserve University School of Medicine, Cleveland, and Philip Handler, Ph.D., associate in physiology and nutrition, Duke University School of Medicine, Durham, North Carolina, for work on "use of choline and other lipotropic factors in the prevention and treatment of fatty infiltration of the liver and hepatic insufficiency." Dr. Richard Lewisohn, of the cancer research laboratory of the Mount Sinai Hospital, New York, was

granted a fellowship for work on "action of ingested choline, lecithin, methionine, and inositol on precancerous lesions and disorders associated with neoplastic diseases." John R. Murlin, Sc.D., professor of physiology, University of Rochester, N.Y., received a fellowship for research on "effects of riboflavin, certain amino acids, and casein on the development and growth of cancer."

The committee on medical education did not receive a satisfactory application for the fourth subject provided for under the fellowships, and no award was made for a study "of the relationship between precancerous lesions of the mouth, hepatic insufficiency, and gastrointestinal disorders."—*J.A.M.A.*, July 8, 1944.

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## NEW YORK ACADEMY ESTABLISHES BUREAU OF MEDICAL EDUCATION FOR POSTGRADUATE INSTRUCTION

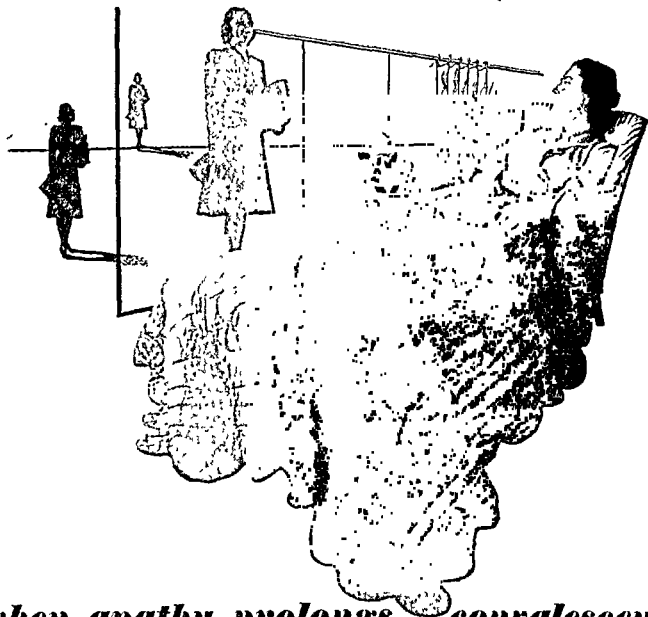
Anticipating an unprecedented demand for postgraduate medical education upon the termination of war, particularly from physicians returning to civil life from service in the armed forces and from civilian physicians from Central and South America, as well as from European countries released from Nazi control, the New York Academy of Medicine has created a Bureau of Medical Education.

The function of this Bureau will be to serve all physicians interested in furthering their medical education, but particularly the physicians returning from the war, and the foreign physicians who come to New York for postgraduate instruction.

The Bureau, organized by and operated under the supervision of the Committee on Medical Education of the New York Academy of Medicine, will render its services without charge.

The Bureau plans to publish announcements of postgraduate medical courses conducted by the universities and the hospitals located in New York City.

Thirty-three of the leading hospitals have been invited to collaborate in this work. A group of advisers representing the special fields of medical practice has been appointed to supervise the work of the Bureau.



## *when apathy prolongs convalescence*

Many convalescent patients, faced with the "drab succession of dreary days", may develop a reactive depression which can markedly retard normal recovery.

This depression may manifest itself in symptoms of apathy, hopelessness or despondency, psychomotor retardation and subjective weakness.

Obviously, the physician should guard against undue stimulation. But when, in his judgment, a convalescent patient will

benefit by a sense of increased energy, mental alertness and capacity for work, the administration of Benzedrine Sulfate Tablets will often accomplish the desired result.

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# Medical News

## Joint Committee Plans Physical Fitness Year

A MAJOR step toward national physical fitness—the planning of a Physical Fitness Year—was initiated under the direction of a Joint Committee of the American Medical Association and the National Council on Physical Fitness, at a meeting at the National Headquarters, Selective Service System, Washington, D.C., on July 14.

The Special Emphasis Year on Physical Fitness is planned to start throughout the country on September 1, 1944.

Col. Leonard G. Rowntree, chief of the Medical Division of National Selective Service, is chairman of the joint committee. Some of the best-known medical men, civilian leaders, educators, and Government executives will help to develop the platform on which the Special Emphasis Year on Physical Fitness will be based and operated. For the first time, according to Colonel Rowntree, organized medicine is joining forces with other professional groups and organizations to develop national plans to meet the problem of the low level of physical fitness existing in the population.

The purpose of the Special Emphasis Year on Physical Fitness is to direct the attention of the public to its responsibilities for a stronger, healthier home front necessary for the successful pursuit of the war and for the peace that will follow victory, Colonel Rowntree said. It is also part of the plan to effect increased activity on the part of all public and private agencies capable of influencing public opinion, providing programs, and operating them wherever possible.

This Physical Fitness Year, according to the Joint Committee, will increase materially the activities and responsibilities of the schools and colleges in matters of physical education, and of Federal, state, and local governments to provide ready opportunities for the improvement of physical health, to coordinate the activities and support of labor and industry, social and religious groups, patriotic groups and professional and amateur sports organizations concerned in this field. The Joint Committee said it would attempt to utilize to the fullest all media of information and promotion and that the platform would include all possible approaches to the problem of increasing physical fitness in the civilian population of America today.

"One of the basic reasons for this Special Emphasis Year on Physical Fitness," said Colonel Rowntree, "is the constant stream of reports continuously coming in to Selective Service from industry and labor, local boards, and induction stations, indicating lack of physical fitness not only among the general population, but especially among the youth of the nation.

"The Special Emphasis Year on Physical Fitness should be approached in much the same spirit as will be the next war loan drive.

"Though much has been done, we face the question, What more can be done? We must make certain that the United States will be better prepared to defend itself in the future. This program must be brought home to every citizen so that their personal responsibility can be assumed for physical fitness. It is the patriotic responsibility of all Americans to be in the best possible physical condition in war and for peace."

The Joint Committee, which met in Washington, is made up of five members appointed by the American Medical Association—Dr. Roscoe L. Sensenich, Dr. Morris Fishbein, Maj. Gen. George F. Lull, Dr. William Stroud, and Dr. L. A. Buie; five members appointed by the Chairman of the National Council on Physical Fitness—Dr. Hiram Jones, Dr. William F. Jacobs, Dr. John F. Studebaker, Mr. Arch Ward, and Mr. A. H. Pritzlaff; Captain C. Raymond Wells, president of the American Dental Association; Mr. Watson B. Miller, assistant administrator of the Federal Security Agency, who will serve particularly to advise on governmental relationships. The president of the A.M.A. and the chairman of the Committee on Physical Fitness are ex officio members; Colonel Leonard G. Rowntree, *chairman*; Frank S. Lloyd, *Secretary*; Dr. Franz Schuck, *Assistant to the Chairman*; and Loretta Flannery, *Recording Secretary*.

The Joint Committee is responsible for the policy, plan, supervision, and evaluation of the Special Emphasis Year. The Committee will meet at the call of the chairman and the expenses of the first meeting will be carried by the Committee on Physical Fitness. This committee prepared the way for the meeting of the National Council on Physical Fitness held late in July.

The Surgeons General of the Army, Navy, and the U.S. Public Health Service will serve in an advisory capacity to the Joint Committee. They are to be kept continuously informed and will provide advice from their own initiative or in the light of the requests from the Joint Committee.

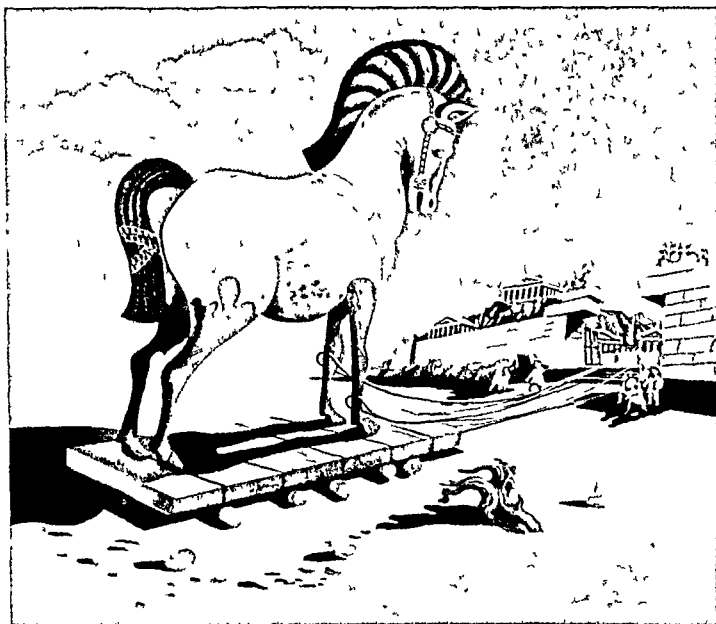
The Advisory Committee on Government Liaison is made up of representatives of the various government agencies which are particularly concerned with this Special Emphasis Year. It included Maj. Gen. Lewis B. Hershey, of Selective Service; Gov. Paul V. McNutt, Federal Security Administrator; Dr. Warren F. Draper, of the U.S. Public Health Service; Mr. Donald M. Nelson, of the War Production Board; Mr. Elmer Davis, of the Office of War Information; Gen. Frank T. Hines, of the Veterans Bureau. Others will be added as necessity may demand.

The Chairman of the Joint Committee appoints individuals to serve as aids to the Joint Committee in areas where coordination is necessary. These include finance, program, manuals, inventory, public relations, and evaluation. It is the responsibility of these coordinators to inform the Joint Committee concerning the effectiveness of the programming in their particular area, paying particular attention to unnecessary overlap and gaps in the general strategy of approach. It is their further responsibility to carry out special tasks assigned to them by the Joint Committee of their particular area of interest. These coordinators have no administrative authority or responsibility in the actual program areas.

The Program Council consists of the chairmen of the various programming sections and other persons appointed by the chairmen. Dr. C. Ward Cramp-ton, of New York City, was elected chairman of the Council.

It is the responsibility of the Program Council to share the plans and experiences of the various sec-

[Continued on page 1700]



**Therapeutic Trojan Horse...** Sulfonamides are bacteriostatic, not bactericidal, not self-sterilizing. Thus a contaminated sulfonamide preparation, applied locally, may act as a therapeutic Trojan horse, releasing pathogenic bacteria inside the body's primary defenses.

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'Sulfathiadox' Ointment, recently developed by the Warner Institute for Therapeutic Research, is not only self sterilizing with respect to *Streptococcus hemolyticus*, *Staphylococcus aureus* and *Escherichia coli*, but also for the highly resistant,

spore forming, anaerobic *Clostridium welchii* and *Clostridium tetani*.

The special water washable, oil in water base of 'Sulfathiadox' Ointment assures better 'point of contact' utilization of the sulfathiazole and is readily miscible with purulent and serous exudates. 'Sulfathiadox' Self Sterilizing Sulfathiazole Ointment is supplied in 1 ounce tubes and in 1 pound jars. William R. Warner & Co., Inc., New York 11, N. Y.

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**Sulfathiadox**

SELF STERILIZING SULFATHIAZOLE OINTMENT

[Continued from page 1698]

tions, to view the program in its entirety, to recommend these programs to the Joint Committee, and to carry out the instructions of the Joint Committee for more effective planning.

Eight programming sections were appointed: institutional planning, management, labor, promotion, associated industry, schools and colleges, state and local organization, and medical affiliates. New York State workers in the programming sections are Dr. Crampton, chairman for institutional planning; and Dr. Chas. Gordon Heyd, also of New York City, was chosen as cochairman by the A.M.A. Dr. Louis H. Bauer, of Hempstead, chairman for management; Dr. Nathan B. Van Etten, of the Bronx, chairman for medical affiliates; Dr. Kendall Emerson, of the National Tuberculosis

Association; Miss Edith Gates, Director of Health Education of the National Board of the Y.W.C.A.; Samuel D. Gershovitz, camp and health director of the National Jewish Welfare Board; George Hecht, of *Parents' Magazine*; Dr. W. L. Hughes, of Teachers College, Columbia University; Dr. Hiram A. Jones, Director of Physical Fitness of New York State; the Hon. Irving Lehman, of the State of New York Court of Appeals; Msgr. Edward R. Moore, of New York Catholic Welfare; Daniel A. Poling, D.D.; Dr. William A. Sawyer, representing the American Medical Association; and George S. Stevenson, of the National Committee for Mental Hygiene.

The committee has written a seven-plank platform for broad action of a national scale, and steps were taken "to establish general standards for age groups."

### Advisory Council Named to Administer Workmen's Compensation Law

ON JUNE 25, Governor Dewey appointed a state industrial council of nine members, reduced from fifteen, under a reorganization as a result of the recent state investigation into administrative aspects of the Workmen's Compensation Law.

The council's function is that of an advisory body to the state industrial commissioner on all matters relating to the Department of Labor, which, in turn, administers workmen's compensation. Under the reorganization act, which requires three representatives each for employees, employers, and the medical profession, membership of the former council was terminated on June 1. The new unit

includes employee and employer representatives. In addition, medical representatives listed are Albert W. Bailey, osteopath, Schenectady; Dr. Connie M. Guion, New York City, and Dr. Nathan B. Van Etten, Bronx. Dr. Guion and Dr. Van Etten are new appointees, the others having been members of the former council. The reorganization law provides that physicians on the council shall function also as a medical appeals unit which shall "consider all matters connected with the practice of medicine, prescribe rules for the medical practice committee, medical societies, or boards investigating medical violations, and shall review charges for medical treatment and care (of injured workmen)."

### Medical School Enrollment Advanced Three Months

MEDICAL school programs for new civilian students began July 1 instead of October 1, as originally planned. Under recent Selective Service regulations, the only students who could be deferred on occupational grounds were those who had entered a medical school by July 1. The schools, therefore, advanced their matriculation date three months in order to obtain occupational deferments for civilian freshmen for the coming year.

This new plan, which will affect approximately 2,000 students, was developed by the medical col-

leges in cooperation with Army officials and Selective Service authorities. For the next three months students will attend special courses, in some cases doing premedical work under college authorities. The regular medical classes will begin October 1. The program does not apply to the medical schools whose next entering class is scheduled for later than October 1.

At present the Army and Navy together supply about 60 per cent of the medical and dental students, the remainder being chosen from civilian ranks.

### Measles Preventive to Be Available to the Public

IMMUNE serum globulin, one of the discoveries of the war research program and used by the armed forces as a preventive for measles, is being made available to the American people at cost under a plan adopted by the American Red Cross in cooperation with the armed forces and various pharmaceutical manufacturers, the *Journal of the American Medical Association* for July 1 announces. Immune serum globulin is one of the fractions or components of blood plasma. Recently announced studies re-

vealed that it contains all of the antibodies in the blood. So far immune serum globulin has been used only for measles.

Since its discovery, immune serum globulin has been used exclusively by the armed forces. Now that a surplus has been built up beyond the needs of the armed forces this surplus is to be made available at actual cost through health departments to the American people, from whom came the blood plasma providing the new serum.

### Health Board Amends Section on Communicable Diseases

HEALTH Commissioner Ernest L. Stebbins of New York City has announced that the Board of Health at a meeting held July 11 amended Section 89 of the Sanitary Code relating to isolation of persons affected with meningococcus meningitis and poliomyelitis. This action was taken in order to conform with modern public health procedures. While until now isolation in both these diseases was fourteen days, it will from now on be limited until the temperature has reached normal.

In the case of meningococcus meningitis, treatment with sulfa drugs and penicillin has shortened to a marked extent the time of recovery. The organisms disappear very quickly when prompt and adequate chemotherapy has been administered. In the case of poliomyelitis public health authorities have considered that the length of the isolation period may be safely limited to the period when the temperature is above normal.

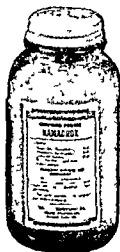
[Continued on page 1702]

# EFFECTIVE *Ambulant* THERAPY

Kamadrox fulfills the three demands of the patient in peptic ulcer, gastritis, and gastric hyperacidity: It stops the characteristic pain promptly—keeps the patient ambulatory—permits lesions to proceed to healing. • Kamadrox—composed of magnesium trisilicate (50%), aluminum hydroxide (25%), and colloidal kaolin (25%)—provides promptly effective, profound, and prolonged acid neutralizing power; systematically inert, it cannot lead to alkalosis or acid rebound; it is astringent, demulcent, adsorbent, protective; it exerts no influence on intestinal motility, proves neither laxant nor constipating. Its pleasant taste promptly gains patient cooperation.



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[Continued from page 1700]

The Board of Health also deleted the requirements for the exclusion of contacts to these diseases from school or work.

The amendments as adopted by the New York City Board of Health paralleled the action taken at the recent meeting of the Public Health Council of the New York State Department of Health and are in line with the recommendations of the joint Technical Advisory Committee for the Care of Patients with Anterior Poliomyelitis for the Health Departments of New York City and of New York State.

The members of the Advisory Committee in-

clude: Dr. Edward S. Godfrey, Commissioner of Health, New York State Department of Health; Dr. Ernest L. Stebbins, Commissioner of Health, New York City Department of Health; Dr. Philip Duncan Wilson, chief orthopaedist, Hospital for Special Surgery; Dr. William Benham Snow, Columbia University; Dr. James L. Wilson, Children's Service, Bellevue Hospital; Dr. Tracy J. Putnam, chief, Neurological Institute, Columbia University; Dr. R. Plato Schwartz, University of Rochester; Dr. Kristian G. Hansson, chief of physiotherapy, Hospital for Special Surgery; Dr. Alan De Forest Smith, surgeon-in-chief, New York Orthopaedic Hospital.

## County News

### Bronx County

The offices of the Bronx County Medical Society are now located on the sixth floor of the Rogers Building, 400 East Fordham Road.

### Broome County

Dr. John Sassani recently took up his duties as a medical consultant to the Municipal Welfare Department of Binghamton. He replaced the late Dr. H. B. Marvin.\*

### Cattaraugus County

The county-wide industrial x-ray survey, conducted according to a plan drawn up by the members of the Industrial X-Ray Committee, has been completed. Members of the Committee are: Dr. James F. Durkin, representing the county medical society; Dr. Richard Nauen, the County Department of Health; Mr. Stephen Crowley, labor; Mr. Thomas Sweeney, management; Dr. John Armstrong, the county tuberculosis association, and Mr. James Brnold, the public.

Employees of twenty-five industries representing eight localities were offered the opportunity of receiving a free chest x-ray. The cost of 65 cents per x-ray was borne by the company, with one exception. Three thousand, five hundred and forty-five apparently healthy individuals were actually x-rayed. Confidential reports will be sent out to these persons after the films have been read by the County Health Department. Every employer will receive a statement regarding the general condition of the workers in his plant. It will take about a month for these reports to be prepared and distributed.

The portable x-ray unit was set up in thirteen different places.

Each plant where the unit was set up arranged for secretarial help, necessary dressing rooms, and distribution of identification cards, and made it possible for each employee to have time off for his x-ray regardless of whether or not it interfered with his work.

The newspapers in the county helped materially to make the survey the success it was by printing daily and weekly releases sent to them by the Cattaraugus County Tuberculosis and Public Health Association, which promoted the industrial x-ray survey and conducted a health education campaign, including literature, talks, and movies on the subject of tuberculosis both in industry and in the schools.\*

### Chautauqua County

Dr. Hilding A. Nelson has been appointed chief

of the Emergency Medical Service of Jamestown under the Office of Civilian Protection.

In this role Dr. Nelson will assume responsibility for governmental equipment and medical supplies allocated to Jamestown by the Federal Government. He also will head an organization embracing virtually all the doctors in the city, some ninety nurses, and medical aides, according to Lt. Elmer Lee, executive officer of the Office of Civilian Protection.

Dr. Nelson succeeds Dr. W. Gifford Hayward, who recently resigned. Dr. George W. Cottis set up the Emergency Medical Service but relinquished the post when he became president of the State Medical Society in 1942.\*

### Erie County

Dr. Stockton Kimball, of Buffalo, gave a lecture entitled "Tropical Diseases" at a meeting of the Bradford County (Pennsylvania) Medical Society on June 28.\*

. . .

Dr. A. H. Aaron, of Buffalo, is the new president of the American Gastroenterological Society.

Dr. Aaron, who is professor of clinical medicine in the University of Buffalo Medical School, has been treasurer and vice-president of the association. He is the third Buffalo physician to be president, the others, having been Dr. Allen A. Jones and the late Dr. Charles G. Stockton.\*

### Herkimer County

Two new physicians have located in Little Falls in the offices formerly occupied by Dr. Hans Kotrnetz and his wife, Dr. Margarete Kotrnetz, recently accepted in the medical division of the armed forces, the former as a captain and his wife as a first lieutenant.

The new doctors are Dr. Irwin Freund Forbes and his wife, Dr. Margot Freund Forbes. They studied at the universities of Berlin, Vienna, and Munich, and did postgraduate work in surgery and medicine in European hospitals. From 1935 to 1941 they were in general practice in Berlin, and they arrived in the United States in 1941. At that time they practiced in New Jersey, and prior to coming here the two doctors practiced in New York City. They received their state licenses in 1942.\*

### Nassau County

Dr. Austin B. Johnson, of Cedarhurst, was elected president of the county society at the annual election meeting held on May 22 at Mercy Hospital

[Continued on page 1704]

\* Asterisk indicates that item is from a local newspaper.



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Sulfanilamide and its derivatives are rendering vital wartime service on all fronts. On fields of battle all over the world as well as on the home front, these compounds provide the physician with remarkably potent weapons with which to combat wound infection and a wide variety of infectious diseases.



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*Literature on Request*



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[Continued from page 1702]

in Hempstead. He succeeds Dr. Nathaniel H. Robin, of Hempstead.

Dr. Johnson's former position of president-elect was filled by Dr. William C. Atwell, of Great Neck. Dr. Eugene H. Coon, of Hempstead, was elected vice-president, and Dr. E. Kenneth Horton, of Rockville Centre, secretary-treasurer.

Members of the board of censors are Dr. Milton T. Gaillard, of Baldwin; Dr. R. R. Galione, of Roslyn Heights, Dr. A. Milton Goldman, of Rockville Centre, Dr. James L. Winemiller, of Great Neck, and Dr. Charles Edwin Woods, of Westbury.

Members of the Workmen's Compensation Board named for two-year terms are Dr. Rudolph Dery, of Lynbrook; Dr. Stuart T. Porter, of Floral Park; and Dr. J. Wesley Bulmer, of Glen Cove. Dr. Coon became a delegate to the State Society for a two-year term.\*

#### New York County

Dr. John A. Ferrell has been appointed medical director of the John and Mary R. Markle Foundation for research in medical and physical sciences in the United States and Canada. This appointment was effective as of July 1, 1944.

. . .

At the recent meeting of the American Board of Dermatology and Syphilology held in Chicago, Dr. Howard Fox was elected president for the coming year. Dr. George M. Lewis was named secretary-treasurer.

. . .

The Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the following appointment and promotions on the scientific staff, effective July 1, 1944: new appointment—Dr. René J. Dubos, member; promotions: Dr. Walther F. Goebel, associate member to member; Dr. Robert F. Watson, assistant to associate.

. . .

The following New York City doctors received Certificates of Merit for exhibits at the recent annual session of the American Medical Association in Chicago: Drs. Harry Gold and McKeen Cattell, Cornell University Medical College, for the exhibit on "Recent Developments in Digitalis"; Drs. Kurt Lange and Linn J. Boyd, New York Medical College, on the Use of Fluorescein to Determine the Adequacy of Circulation."

Dr. Alfred E. Cohn, since 1920 a member of the Rockefeller Institute for Medical Research, has been made member emeritus of the institute, having reached the retirement age. Dr. Cohn graduated at Columbia University College of Physicians and Surgeons in 1904, joined the Rockefeller Institute in 1911, and became an associate member in 1914; he has been a member of the China Medical Board of the Rockefeller Foundation since 1934.

. . .

Dr. David W. Park resigned his position as superintendent of Potsdam Hospital, Potsdam, effective July 1, to become field representative of the American College of Surgeons. For the time being he will continue to live in Potsdam.

. . .

Dr. Henry Greenwood Bugbee was awarded the Keyes Memorial Medal at the fifty-sixth annual meeting of the American Association of Genito-Urinary Surgeons in Stockbridge, Massachusetts, held June 8, 9, and 10. The award was presented to Dr. Bugbee because of his outstanding scientific contributions to urology and his constructive influence as an officer and counselor of various urologic societies. The Keyes Medal has previously been bestowed to only three outstanding medical or research workers.

#### Oneida County

Two speakers were heard at the Academy of Medicine meeting in the Utica on June 22.

Dr. Eugene N. Boudreau, of Syracuse, read a paper on "The Social and Medical Challenge of Alcoholism," and Maj. George Burgin, Little Falls, recently returned from the Pacific area and cited for rescuing a fellow officer while under fire, related some of his experiences.

Dr. Boudreau cited some of the treatments that have proved effective in chronic alcoholism. He said the cause of delirium tremens and psychosis evident in such cases has not yet been determined. He made a statistical report of the vulnerable cases which will need attention during the next three years and said between 40,000 and 50,000 chronic cases will exist in the nation by 1947.

Dr. Ross D. Helmer opened the discussion on Dr. Boudreau's paper.\*

#### Rensselaer County

The Troy Veterans Information Service Center, a central clearing house for all activity dealing with rehabilitation of returning veterans, now is completely ready for functioning.

Through the center, forty-eight agencies in Troy, all equipped in some way to assist veterans as soon as they make known their difficulties, are united.

Services available will touch on the following activities: canteen, children's service, civil service, education, employment, financial aid, health, general information, insurance, job training, legal aid, mental hygiene, recreation, re-employment, rooms, veterans services, welfare.

The type of service provided by each of the forty-eight agencies has been arranged in a cross-indexed directory. The directory was compiled by James C. Turner, John J. Dougherty, and Samuel W. McCochrane.

By means of the directory, a veteran applying at any agency may, in a few minutes, find the exact station to assist in his case, thereby saving duplication of effort and loss of time.

Discussion at a committee meeting on June 23 centered on the handling of cases involving mental or nervous ailment and requiring the service of a psychiatrist to help decide on readjustment treatment.

Joining in the discussion were Dr. A. W. Pense, assistant commissioner in the State Department of Mental Hygiene, Dr. Richard P. Doody, president of the Rensselaer County Medical Society, and Dr. James C. Boland, Troy health commissioner.

Several actual case studies now available were presented for the occasion. The study of the subject will be continued until a solution is determined.\*

#### Schenectady County

Dr. Walter W. Goddard, who was the first intern to serve a full term at Ellis Hospital, is retiring

[Continued on page 1706]

# SOPRONOL *Inhibits* FUNGOUS INFECTIONS



MONILIA  
albicans



EPIDERMOPHYTON  
inguinale



MICROSPORUM  
audouinii



TRICHOPHYTON  
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... As demonstrated by clinical investigation  
in a leading United States hospital

In tests on a large number of hospital patients, Sopronol was found to exert an *inhibitory* rather than a destructive action on the fungus. The advantages of this method are obvious. Sopronol, taken readily into the fungous organism, prevents its development and spread. Hence the infection is quickly brought to an end, but without the customary skin irritation caused by poisonous by-products resulting from strong fungicides in contact with the mold. The chemical basis of Sopronol is sodium propionate.

## ALL SUPERFICIAL MYCOSES (RINGWORM)

Prescribe Sopronol for: Tinea Pedis, Tinea Cruris, Tinea Capitis, Tinea Glabrosa, due to "the dermatophytes"—Trichophyton, Epidermophyton, Microsporum, Monilia (Candida) and pathogenic aspergillae infections. Sopronol is non-irritating, non-keratolytic, non-toxic.

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M.D.

Street

City

State

[Continued from page 1704]

from local practice after fifty years of medical service in Schenectady.

He has been a member of the board of directors of the Eastern New York Orthopedic Hospital Association (Sunnyview) since 1929 and has also served as its treasurer.\*

#### Seneca County

A Baumanometer was presented by the county society at a recent meeting in Waterloo, to Dr. Fredrick W. Lester, Seneca Falls physician and surgeon, in recognition of fifty years of service in Seneca County.

The presentation was made to Dr. Lester by Dr. Walter M. Pamphilon, a member of the medical staff of Willard State Hospital.

Dr. Lester, who is secretary of the county society, began his practice of medicine in Seneca Falls on July 15, 1894. Except for the period during World War I, when he was in the Army Medical Corps, he has maintained his practice in Seneca Falls.

A native of Seneca Falls, Dr. Lester was graduated from Seneca Falls Academy in 1888 and studied medicine in the College of Physicians and Surgeons at Columbia University. His father, the late Dr. Elias Lester, also a physician, practiced medicine in Seneca Falls for many years.

For two years, Dr. Lester served in the Army Medical Corps in World War I. He went overseas as a captain early in the war and was in command of Base Hospital 51 on March 31, 1919, when he was ordered back to this country. He now is lieutenant-colonel in the U.S.A. Medical Corps Reserve.

Dr. Lester also is a member of the Seneca County Tuberculosis and Public Health Committee, Kirk-Casey Post, American Legion; Lt. Cyrus Garnsey, 3rd, Post, Veterans of Foreign Wars; Henry T. Noyes Camp, Sons of Union Veterans; Military Order of the Loyal Legion; the Seneca Falls Historical Society, and the Medical Society of the State of New York.\*

#### Warren County

A detailed review of uses and therapeutic re-

sults of penicillin was given on June 16 by Lt. Comdr. R. C. Arnold of the U.S. Public Health Service at a dinner meeting of the county society in the Glens Falls Country Club.

Lt. Comdr. Arnold illustrated his discourse with a series of slides and charts. He has been doing research with the drug at the Marine Hospital, Clifton.\*

#### Westchester County

In an effort to control and treat rheumatic heart disease in Yonkers, the Yonkers Tuberculosis and Health Association on June 22 adopted a pioneering program for the establishment of a special clinic for "the prevention, control, and study" of the malady, and for a coordinated, city-wide educational project.

It was declared to be the first comprehensive, over all, and inclusive project of its kind in the country in this field.

The clinic will be located at St. John's Riverside Hospital and will be completely equipped and financed by that institution. It is expected that patients with rheumatic heart disease now being cared for at Yonkers General and St. Joseph's Hospitals will be referred to St. John's.

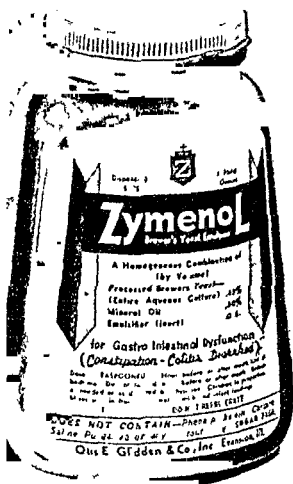
The Tuberculosis and Health Association will provide a special worker, trained in nursing, social work, and medical studies. Her assignment will be to study and work with patients at the clinic; to study the home background of rheumatic children and their siblings, and to serve in an advisory and teaching capacity for nurses of the City Health Department, the Visiting Nursing Association, and hospital and school nurses.

Dr. Herbert W. Schmitz is the cardiologist in charge of clinic work for rheumatic heart disease cases in two Yonkers hospitals and also attending physician at Irvington House in Irvington. Mrs. Marie F. Kirwan is executive secretary of the association.

Dr. William J. Vogeler, association president, appointed a committee on administration of the clinic, to include: Dr. Edwin C. Coyne, Dr. Michael F. Sullivan, Dr. Virginus Minervini, Dr. Schmitz, Dr. Vogeler, and Mrs. Eleanor Benedict, with Mrs. Kirwan as committee secretary.\*

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Jabez E. Armstrong	77	Buffalo	June 3	Greenwich
Leon Cherurg	83	Dorpat	April 18	Manhattan
William S. Dart	79	N.Y. Eclectic	June 12	Oneonta
Arthur C. Hagedorn	75	Albany	June 23	Gloversville
Sherwood A. Haggerty	72	Albany	June 15	Richfield Springs
Alonzo A. Holdbrooks	62	Howard	April 19	Manhattan
Elmer I. Huppert	65	Univ. & Bell.	June 30	Manhattan
John C. Kamp	84	Buffalo	June 18	Saugerties
Hubert B. Marvin	64	Buffalo	June 20	Binghamton
Paul Nichols	44	Berlin	June 29	Manhattan
Ellwood Oliver	73	Albany	July 6	Pine Plains
Hyman L. Ratnoff	62	Cornell	June 25	Manhattan
Alexander Soble	47	P. & S., N.Y.	June 11	Elmira



Zymenol provides a twofold natural approach to the two basic problems of Common Diarrhea;

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... through BREWERS YEAST ENZY MATIC ACTION\*

**NORMAL INTESTINAL MOTILITY RESTORED**  
... with COMPLLTE NATURAL VITAMIN B COMPLEX\*

This twofold natural therapy assures normal bowel function without constipating astringents and absorptives, artificial bulrage or catharsis.

*Write For FREE Clinical Size*

\*Zymenol contains Pure Aqueous Brewers Yeast (no live cells)

# Health News

## Miss Sheahan Becomes President of N.O.P.H.N.

Marion W. Sheahan, R.N., director of the New York State Health Department's Division of Public Health Nursing, was elected president of the National Organization for Public Health Nursing for the biennium 1944-46 at the recent meeting of the organization in Buffalo. She previously held the office of first vice-president.

Miss Sheahan has been a member of the N.O.P.-H.N. for a number of years and has participated actively in its work. For several years she was chairman of the Records Committee and during 1943-44 she was chairman of the Postwar Planning Committee. She also held the chairmanship of the Committee on Nursing Administration, by virtue of which she was the nursing representative on the Committee on Administrative Practice of the American Public Health Association.

## Health Unit Thirty Years Old

The Bureau of Health Education of the New York City Health Department marked its thirtieth anniversary on July 1, it was announced by Health Commissioner Ernest L. Stebbins.

"Since 1914," he said, "the bureau has steadily expanded its facilities, until today it makes use of every recognized publicity medium to teach good health to the people. Booklets and posters, lectures and movie showings, news releases and special exhibits—these are just a few of the tools used by the bureau in its continuous war against disease."

During its thirtieth year alone, according to Savel Zimand, its director, the bureau supplied the public between 200,000 and 300,000 booklets and pamphlets on health topics each month, arranged about 250 motion pictures showings and many lectures and exhibits, and prepared weekly programs on health for local radio stations.

## Scope of Health Service is Broadened

On July 3 President Roosevelt approved legislation broadening the scope of the United States Public Health Service and in a statement commended the department for "its excellent record in protecting the health of the nation."

The act authorizes Federal grants for research by nongovernment institutions, larger appropriations to aid state public health work, and the establishment of a national tuberculosis program. It also provides commissions for public health nurses.

## Community Service Society Reports on Year's Activity

More than half of the families aided by the Community Service Society of New York City last year received nursing and health services, according to the annual health services report of the agency.

Nursing and health services were provided for 33,155 persons in more than 16,500 New York City families during the year, representing 59.2 per cent of the total number of families assisted. For the two preceding years the proportion was 58.9 per cent and 60 per cent.

In addition to the number of persons served in the nursing and health plan, more than 50,000 school children were aided by a continuing dental-nutrition program conducted by the society in fifty-two public and parochial schools in Manhattan.

The agency's nutrition bureau aided members of 1,180 families during the year, with an estimated attendance of 3,000 at individual diet conferences, group talks, and nutrition classes.

The society's medical clinic at 29 Park Avenue provided care for 2,436 patients in 11,000 visits during the year. Its four dental clinics treated 12,242 patients, who made more than 80,000 visits, according to the report.

## Information Available Regarding Health and Welfare of Children

The attention of all practicing physicians in New York City is called to the accessibility of information with regard to facilities for the health and welfare of children.

The Information Bureau of the Children's Welfare Federation at 435 Ninth Avenue (just above 34th Street) has been functioning for some years as a direct service to professional workers and others who need current information. This Bureau keeps in touch with every type of child health and welfare work carried on in New York City, such as child health services, maternity services, and camping facilities. In 1943, eight thousand, one hundred and sixty-five inquiries were answered.

A call in person or on the telephone (Medallion 3-3105) is invited whenever a doctor would like up-to-date information on facilities that are available for dealing with any problem of child health or welfare.

## Nutrition Information for Public Health Nurses

In response to many requests from public health nurses, the State Department of Health is distributing monthly, through its staff nutritionists, a new four-page leaflet, *Nutrition Highlights*.

As its name implies, this publication gives in compact form information on nutrition which may be readily utilized by the public health nurse in her daily work. The leaflet includes a "Question Box," up-to-the-minute news under the heading, "What's New," and references to scientific literature as well as to popular pamphlets on nutrition under the caption "Interesting Reading." Future issues will carry résumés of nutrition experiences of public health nurses in the field. It is hoped that all members of nursing groups will send in contributions and suggestions.

*Nutrition Highlights* has a circulation of approximately 2,500, restricted to public health nurses. The Department will furnish this publication, to the extent of its facilities, to nurses doing public health work within New York State who may be interested in receiving it. Requests should be addressed to the New York State Department of Health, Bureau of Nutrition, Bond Building, 76 State Street, Albany 7, New York.

[Continued on page 1710]

# ANTIBODIES TO HISTAMINE INDUCED IN HUMANS BY HISTAMINE COMPLEXES

MILTON B. COHEN, M.D., and HEROLD F. FRIEDMAN, M.D.  
CLEVELAND, OHIO

hetical histamine by  
"base" has also been  
type\* results  
e thus given incon-  
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as a specific

DALE and Laidlaw,\* in 1910, demonstra-  
tion by histamine was similar to that of  
Lewis and his co-workers a demonstration of  
indistinguishable from an allergic test. The  
histamine these changes it could have been

Histamine-Protein Complexes  
tion L. Histamine Azoprotein  
D. L. Immunol. 1941

## HISTAMINE SPECIFIC ANTIBODIES

An ingenious new technique for the study of the role  
of histamine in anaphylactic shock and related clinical  
conditions is recently reported by Fell and his co-workers  
of the Research and Biological Research Labora-  
tories, Parke Davis & Co. The original Dale\* theory  
of anaphylaxis assumed that a combination of antigen  
and antibody leads to the explosive liberation of pre-  
formed histamine from the sensitized tissues, the domi-  
nant symptoms of anaphylaxis being due to the liberated  
cellular histamine. Clinical evidence by

or which by chlorination to form ep-  
oxide functional as a hapten. The pro-  
cedure of antigen-antibody experiments were  
complex to determine whether or an anti-  
body induced in man or animals so that  
the body reaction would be bound by  
the shock organs and produce

General bits, with histamine azo-  
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action of the antigen, when  
in vivo or rabbit serum and his  
precipitated desensitized horse  
with histamine in histamine  
reactions

in and  
shock  
bulky

# Now Available HAPAMINE (HISTAMINE AZOPROTEIN)

## A new approach

to the treatment of allergies. Injected subcu-  
taneously, HAPAMINE\* stimulates the formation of antibodies capable of neu-  
tralizing histamine released by body tissues as a result of exposure to allergens.

Climaxing years of laboratory and clinical research, this new antigenic complex  
of histamine linked with an inert protein will be welcomed by allergists who have  
followed the work of Dale and Laidlaw, Fell and his co-workers, Cohen and  
Friedman, and others in this field. HAPAMINE is particularly useful in cases in which:

### Indicated in

Branchial Asthma  
(of allergic nature)  
Vasomotor Rhinitis  
(allergic rhinitis)  
Physical Allergy (heat, light, cold)  
Contact Dermatitis  
Histamine Headache  
Atopic Eczema  
Urticaria

- ① the offending allergen cannot be discovered.
- ② complete avoidance of the allergen cannot be obtained.
- ③ Specific treatment with the allergen is ineffective.
- ④ the allergen is such that no specific treatment is available.

\*Trade-Mark Reg U S Pat Off.

Write for detailed medical literature

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[Continued from page 1708]

## Physical Education in High Schools

Only half of the boys and less than half of the girls in the last two years of high school are now receiving organized instruction in physical education, according to data just made available by the U.S. Office of Education, the Federal Security Agency has announced. This means that about 1,100,000 juniors and seniors in high school are not receiving instruction in physical fitness, F.S.A. said.

According to an estimate for the whole country, based on reports from nine hundred and ninety-two school systems of all sizes, 50.1 per cent of the boys in the eleventh and twelfth grades are now enrolled in physical education classes. Only 46.7 per cent of the girls in the same grades are enrolled in such classes. These figures reveal a 6.3 per cent increase over 1942-1943 in the number of boys receiving physical education and a 4.5 per cent increase in the number of girls, despite the fact that total enrollments of boys and girls in those grade decreased 15.2 and 5.2 per cent, respectively, at the same time, F.S.A. said.

"Though there has been an increase in physical education enrollment, more widespread development of physical fitness must take place if physical requirements of men for the armed forces are to be met, and young women are to be able to take up their wartime responsibilities," Dr. Bess Goodykoontz, Assistant U.S. Commissioner of Education, said. "According to indications, nearly all boys and many girls now juniors and seniors in high school will be in the armed forces or essential industry before the war is over."

Instruction in health education is being given to a smaller percentage of junior and senior boys and girls than is physical education. About 20 per cent of these students are enrolled in these classes this year. This figure represents a 2 per cent increase in this kind of instruction over 1942-1943.

Among reasons preventing greater increases in enrollment in physical fitness classes is the fact that many men teachers of physical education have gone into the armed forces, F.S.A. said. Schools that wished to inaugurate physical fitness programs have often been unable to find trained personnel. In addition, many small high schools have not had funds with which to hire trained teachers of physical education or to purchase needed equipment. Since small high schools enroll about one-third of the high-school pupils in the United States, neglect of physical training in this category of schools is a serious problem, F.S.A. said.

## Service Women's Health at High Level

Health among uniformed women of the armed forces is at a high level, and the average Wac, Wave, Woman Marine, or Spar improves physically after her enlistment, the Office of War Information has reported, on the basis of data from the armed forces.

Waves have increased their weight by an average of five pounds and were found to be without nutritional deficiencies in clinical tests, according to U.S. Navy findings in a test group of 6,400. In another test group, comprising 2,000 Waves, posture and foot defects showed improvement after a period of training. Decided improvement in posture and carriage, considered important to physical health, was accomplished through training. Women Marines show a gain of five to six pounds in weight after entry into the Women's Reserve.

Health safeguards for Wacs, Waves, Spars, and Women Marines include preventive measures established through inoculations, physical training, and proper food, good housing and living conditions, and proper recreation, according to Army and Navy officials. Those who require it receive ample, prompt medical or hospital care.—Release from the Office of War Information.

## Other Americas Provide Funds for Extended Health Work

Six of the other American republics have concluded new agreements with the United States for extension of the inter-American health and sanitation program. They are Brazil, Mexico, Colombia, Peru, the Dominican Republic, and El Salvador.

The agreements are the first to be made for extension of the program which grew out of the Rio de Janeiro Conference of American Foreign Ministers. Nineteen American republics, including the United States, are cooperating in this program.

The new agreements call for a total of \$16,250,000 in joint funds to carry on health and sanitation projects in the six republics to the south. Of this sum more than half is to be contributed by the other American republics and the balance by the United States, through the Institute of Inter-American Affairs, an agency of the Office of the Coordinator of Inter-American Affairs.

The Brazilian agreement sets up a joint fund of \$8,000,000 over the next five years largely for continuance of health and sanitation projects in the Amazon and Rio Doce valleys in support of economic developments under way there. Brazil is underwriting \$5,000,000 of this fund and the United States the rest. The Brazilian agreement was the first for extension of the program.

The arrangement with Mexico calls for equal contributions toward a \$5,000,000 fund for health work to be carried on for the next five years. The cooperative work in Mexico, as projected, includes provision of additional health facilities along the route of the Inter-American Highway, and participation in campaigns for prevention and control of tuberculosis and other diseases along the 1,800-mile United States-Mexican border.

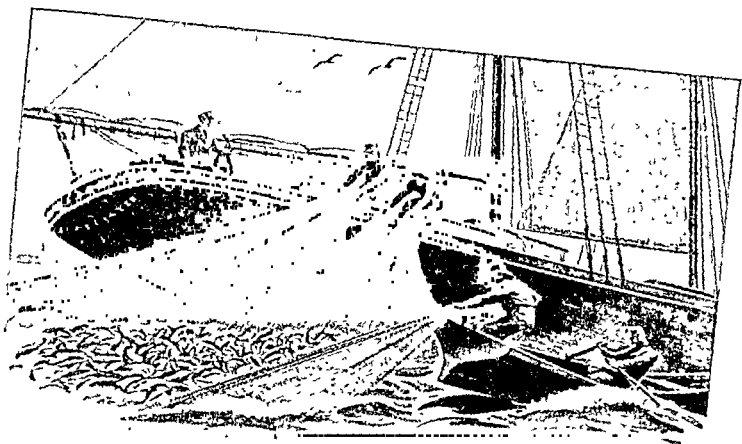
The Peruvian extension is for three years and provides for a joint fund of \$1,000,000 made up of equal contributions of \$500,000. The new funds will enable Peru to extend work on health and sanitation facilities in the Amazon basin and at Chimbote.

El Salvador has agreed to contribute \$300,000 for continuance of the inter-American health work within her boundaries during the next three years. This sum is being matched by the United States. As the program has developed in El Salvador, contributions by the federal government of El Salvador have been supplemented in many instances by contributions from municipalities. Key towns and cities have been provided with sewerage and water supply systems and drainage ditches for elimination of malaria swamps.

The pact with Colombia provides for equal contributions of \$600,000 to carry on for a two-year period projects for the training of nurses and other public health personnel, for operation and construction of health centers and dispensaries, and for malaria control. Much of the work in Colombia is located in regions producing rubber, balsa, quinine, and other strategic materials.

[Continued on page 1712]





## NO SYNTHETICS ADDED...

*Apolarthron is the only high potency preparation of vitamins A and D derived entirely from natural sources. No synthetic vitamins are added or used in its manufacture.*

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The proven greater safety of the

combined use of natural vitamins A and D makes Apolarthron an outstanding contribution to the treatment of arthritis—a chronic disease which requires intensive treatment with massive dosage of vitamin D over an adequate period of time.

Each capsule of Apolarthron contains 25,000 U.S.P. units of natural vitamin D and 30,000 U.S.P. units of natural vitamin A.



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# APOLARTHRON

[Continued from page 1710]

The agreement with the Dominican Republic is for a three-year period. Under its terms a joint fund of \$450,000 is to be set up. These funds are expected to enable the island republic to expand and accelerate work for malaria control.

All cooperative work under the new agreements will continue to be carried out by the special cooperative health services organized in each country.

These services are headed by a United States doctor or sanitary engineer and staffed largely by public health technicians from among nationals of the other Americas.—*Release from the Office of the Coordinator of Inter-American Affairs.*

### West's First Public Health School Opens

The first School of Public Health west of the Mississippi has been established on the Berkeley campus of the University of California, it is announced by President Robert G. Sproul.

With Dr. Walter H. Brown, chairman of the department of hygiene, as acting dean, the school was set up by the Board of Regents after the State Assembly passed a bill appropriating funds. It is an answer to the intensified wartime demand for well-trained personnel to fill the depleted staffs of county health offices in California and other western states, which fear a shortage of facilities for meeting serious public health dangers.

Planned as a University-wide undertaking using

resources of all campuses, the school is being organized as a cooperative enterprise, involving the participation of several other schools and departments, including the fields of medicine, medical research, education, nursing, home economics, and sanitary engineering. The department of hygiene will be renamed the department of public health and will function as part of the school.

Provision for courses and curricula on both undergraduate and graduate levels is contemplated, and plans will be developed regarding graduate training of health officers, epidemiologists, public health engineers, industrial hygienists, and other specialists.

The first official activity of the school will be a special training course for sanitarians to meet the needs of the State Department of Health in the war emergency.—*Journal of School Health, June, 1944*

### New Officers of Health Officers Association

The New York State Health Officers' Association which met in Saratoga Springs June 27-28, elected the following officers for the coming year: president, John R. MacElroy, M.D., Jonesville; first vice-president, George E. Sanders, M.D., Greece; second vice-president, Burdge P. MacLean, M.D., Huntington; third vice-president, Robert Broad, Ithaca; secretary, Russell H. Wilcox, M.D., Tonawanda; and treasurer, H. Burton Doust, M.D., Syracuse.

### AWARD FOR RESEARCH IN HUMAN FERTILITY

The Planned Parenthood Federation of America officially announces an award of \$500 to be presented in 1944 to the scientist who has made the most significant contribution to research in human fertility—either in the control of conception or in the correction of sterility. Eligibility is not limited to any one country, and any scientist anywhere in the world may compete. The purpose of the award is to stimulate increased research in the medical aspects of human fertility.

The closing date for the submission of entries will be December 31, 1944. The judges of each submitted work will be the members of the Medical

Committee of the Planned Parenthood Federation which includes Drs. Richard N. Pierson, Robert L. Dickinson, Nicholson J. Eastman, S. Bernard Wortis, Harvey B. Matthews, H. McLeod Riggins, Abraham Stone, Sophia J. Kleegman, and George D. Cannon. . . .

The initial award is the gift of Mrs. Albert D. Lasker and will be known as the "Mary Woodward Lasker Prize." In addition to this cash prize, a number of plaques will later be presented to other investigators who have made important contributions in this field of science.—*Human Fertility, March, 1944*

### WAC NEEDS ADDITIONAL TRAINED MEDICAL TECHNICIANS

The Women's Army Corps needs additional trained medical technicians. Physically qualified young women with high-school education are urged to make application for enlistment in the Wac service with the medical department. Maj. Gen. Norman T. Kirk, Surgeon General of the Army, re-

cently sent out an appeal for women volunteers in hospital work. The Army offers training to competent young women enlisted in the Women's Army Corps in the field of medical laboratory, dental, x-ray, and other technical subjects.—*J.A.M.A., July 8*

### O'CONNOR IS RED CROSS CHAIRMAN

President Roosevelt has appointed Basil O'Connor, head of the National Foundation for Infantile Paralysis, as chairman of the central com-

mittee of the American Red Cross to succeed the late Norman H. Davis.

Mr. O'Connor will serve without salary.



## *Vitamins Alone* **MAY NOT BE ADEQUATE**

The current popularization of the importance of vitamins, though true in most respects, may prove harmful because of the decreased emphasis placed upon other essential nutrients. A good nutritional state can be achieved and maintained only by satisfying *all* nutritional requirements, not merely vitamins, but minerals and proteins as well.

A food supplement in the literal sense of the word, Ovaltine is a balanced mixture of nutrients which provides virtu-

ally all metabolic essentials. When taken three times daily with the average diet, it makes good the deficiencies usually encountered, and converts the total daily intake to nutritionally satisfying levels. Thus a state of optimum nutrition can be attained, one in which *not only* vitamin requirements are met, but also mineral, protein, and caloric requirements are satisfied. This delicious food drink appeals to patients of all ages, young and old, and is usually taken with relish.

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	Dry Ovaltine	Ovaltine with milk*
VITAMIN A . . .	1500 I. U.	2953 I. U.
VITAMIN D . . .	405 I. U.	480 I. U.
THIAMINE . . .	.5 mg.	1.296 mg.
RIBOFLAVIN . . .	.25 mg.	1.278 mg.
NIACIN . . .	.50 mg.	.50 mg.
COPPER . . .	.5 mg.	.5 mg.

\* based on average reported values for milk.

# Hospital News

## WMC Launches Campaign to Recruit Nurses

THE War Manpower Commission, through its Procurement and Assignment Service, in cooperation with the American Red Cross, has launched a campaign to recruit at least 8,500 nurses for the U.S. Army and U.S. Navy, WMC Chairman Paul V. McNutt announced on July 18.

The nurses, the WMC chairman said, will be recruited at the rate of 1,000 a month for the Army and 500 a month for the Navy, until a total of 5,500 have been recruited for the Army and 3,000 for the Navy.

Mr. McNutt said most of the nurses needed by the Army and Navy will be drawn from lists of nurses maintained by State committees under which nurses are "classified" on a voluntary basis as "available" for military service "after giving consideration to essential civilian services." A portion of the required number of nurses will be recruited from the U.S. Cadet Nurse Training Corps sponsored by the United States Public Health Service.

The nurses to be recruited for the Army are within the quota of nurses announced in May of this year, Mr. McNutt said. In planning the invasion of France, the Army found it necessary to speed up the recruitment, he said.

Mr. McNutt pointed out that it is possible to recruit the required number of nurses for the armed services without handicap to civilian services, since there are approximately 170,000 nurses in active civilian service and 112,300 student nurses in training.

"If we are going to meet the needs of the Army

and Navy it will be necessary for us to use the skills of nurses as effectively as possible," said Mr. McNutt. "The success of our nursing program depends in a large part on the cooperation of the nursing profession. In addition, we must have the cooperation of physicians, hospitals, and patients to prevent waste of professional skills. It is important that we use these skills to the best advantage. We must see to it that our fighting men have the nursing attention every American family wants them to have.

"It is particularly important that nurses who are available for service with the armed forces volunteer for such service."

The WMC chairman said approximately 50,000 nurses are now serving with the Army and Navy. Almost 8,000 of these nurses were obtained through WMC's Procurement and Assignment Service in cooperation with the American Red Cross since January 1, 1944.

The nurses will be recruited at a time when they will have the advantage of being appointed with actual army rank instead of the relative rank which they have held prior to this time. An executive order signed by President Roosevelt on July 12 gives nurses in the Army the full authority of their officer rank. Previously, nurses could not claim dependency allowance and upon retirement received only benefits attached to their permanent rank rather than being permitted to retire in grade. In addition, their commissions were granted by the Surgeon General with the approval of the Secretary of War instead of by the President.

## Institute for Hospital Administrators to Be Held September 11-22

CONDUCTED for the first time in its twelve-year history by the American College of Hospital Administrators, the Chicago Institute for Hospital Administrators will be held at International House at the University of Chicago, September 11-22. Formerly sponsored by the American Hospital Association, the institute will be under the direction of Dr. Malcolm T. MacEachern, Chicago, who has been its director since its inception.

The institute will provide, for the first time, an intensive series of lectures on a particular phase of hospital administration. Each day throughout the course an authoritative expert will lecture on administrative methods of financial control in hospital operation. In addition to this specialized part of the institute, each morning program will include lectures by hospital leaders on such topics as the hospital in the community public health program,

organization, basic principles, professional and non-professional services, standardization problems, administrative control of services to patients, the patient's environment, medical staff and the specialized departments, nursing service and nursing education, and numerous other aspects of hospital management.

There will be lectures in the forenoons, seminars and field trips in the afternoons to selected Chicago hospitals for demonstrations, and evenings will be devoted to conferences on administrative and departmental problems facing hospitals.

Registration will be limited to one hundred hospital administrators and assistant administrators. Applications for registration may be made through Dean Conley, executive secretary of the American College of Hospital Administrators, 18 East Division, Chicago.

## Port Chester Hospital to Teach Nursing

THE United Hospital in Port Chester has established an affiliation program with the Adelphi College School of Nursing, Garden City, which will return the Port Chester institution to the field of nurse training on a scientifically advanced basis. The program will become effective on September 18, when the first group of student nurses will arrive at the hospital.

The United Hospital operated its own Nurses' Training School, which attracted girls from many

parts of this country and Canada, until 1937. Some months ago, however, hospital officials began to consider re-establishing a nurses' training program, because the severe shortage of graduate nurses and because of the amount of greatly needed clinical material available for trainees at this hospital.

The Adelphi College School of Nursing was incorporated January 28, 1943. It is the first central collegiate school of nursing under a state-wide

[Continued on page 1716]

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[Continued from page 1716]

program to coordinate facilities of liberal arts colleges and the hospitals and health agencies of the community. Moreover, it is one of the largest collegiate schools of its kind in the United States. Of three hundred and thirty-five students enrolled, three hundred and three are in the Cadet Nurses Corps. An additional two hundred and fifty student nurses will be admitted during the next academic year.

Girls in the School of Nursing receive their clinical training in cooperating hospitals and health agencies, which include: Nassau Hospital at Mineola, Queens Hospital at Jamaica, Meadowbrook Hospital at Hempstead, Nassau County Hospital at Farmingdale, Mercy Hospital at Rockville Centre, the Central Islip State Hospital at Central Islip, the Nassau County Department of Health, and the United Hospital, Port Chester.

The original class at United will number about thirty-five student nurses. This group will have had one year of college work at Adelphi and will affiliate at United Hospital for twelve months. Two classes will be accepted yearly, in June and September. There will be approximately sixty-five students in attendance at the hospital at all times after the program gets under way. The agreement creating this affiliation was signed by James E. Stiles, chairman of the board of trustees of Adelphi College, and William A. Pond Phipps, president of the board of trustees of the United Hospital.

The negotiations and the operation of the program will be under the direction of Paul Dawson

Eddy, president of Adelphi College, and Carl P. Wright, Jr., superintendent of United Hospital, together with Miss Mildred Montag, director of the School of Nursing, and Miss Harriet Klein, director of nursing at the hospital.

The School of Nursing offers two programs of study. The first provides for two years of academic work and two years of clinical experience. At the end of the four-year course, a bachelor of science degree and a diploma in nursing will be awarded.

The second program is designed for the war emergency and consists of nine months' academic program followed by twenty-one months of clinical experience.

At the end of this period, thirty months, a diploma in nursing will be granted and the student will be eligible to take the New York examinations for license as a registered professional nurse. She may, at the end of the war, return to college for one year of academic work, and upon completion of that year, be granted the bachelor of science degree.

The U.S. Cadet Nurse Corps, which has a unit at Adelphi College, provides an unequalled opportunity for girls to study nursing. Any student admitted to the Adelphi College School of Nursing who is 17½ years of age is eligible for membership in the Corps. In return for a promise to remain in active nursing (either civilian or military) for the duration of the war, members of the Cadet Corps at Adelphi receive tuition, fees, books, uniforms, and maintenance. In addition, they receive a monthly stipend of \$15 for the first nine months and \$20 for the next twenty-one months.

### Survey Shows Extent of Postwar Building Expectations

**P**ROPOSED nonfederal hospital building that will require an expenditure of \$1,193,133,985 and will provide 180,626 new hospital beds may be anticipated on the basis of reports from 1,683 hospitals tabulated in a survey being conducted by John N. Hatfield, chairman of the committee on governmental aid for postwar construction of the council on governmental relations of the American Hospital Association. Mr. Hatfield, administrator of the Pennsylvania Hospital, Philadelphia, headed the committee investigating postwar hospital conditions in this country.

"In arriving at this conclusion," Mr. Hatfield said, "it is assumed that the nonreporting hospitals require expansion in the same ratio per existing beds as those cooperating in the survey."

Hospitals numbering 897, or 53.3 per cent of those reporting, indicated some building plans, the com-

mittee reported. These institutions house 246,243 beds, or 70.5 per cent of the facilities in the reporting hospitals. Reports were received from a broad cross section of the hospital field, including a ten-bed hospital planning to spend \$30,000 and a one thousand five hundred-bed hospital planning to spend \$2,000,000 for plant expansion.

Ninety-five of the reporting hospitals already have projects under way, seventy have definite plans for 1944, and five hundred and eighty-two are leaving their plans for the postwar period.

A total of seventy-four hospitals reporting have cash on hand for financing of their postwar plans; three hundred and thirty will need government funds; and the others will raise money from private financing, public campaigns or subscriptions, hospital income, and miscellaneous or undetermined sources.

### Improvements

Alterations are in progress at the Nursing Education Center of the St. Lawrence State Hospital in Ogdensburg to provide additional classrooms, a laboratory, and a study room. Dr. John A. Pritchard, superintendent, has announced.\*

\* \* \*

Peekskill's first tangible gift from contributions given to the National Foundation for Infantile Paralysis is a mobile respirator, purchased by the Westchester Chapter of the Foundation at a cost of more than \$2,500 and officially presented to the Peekskill Hospital on June 22.\*

\* \* \*

At a recent meeting of the Executive Board of the Eastern Long Island Hospital a letter was read from Mrs. Alice Stokes, widow of the late Dr. John Stokes of Southold, donating the x-ray laboratory equipment owned by Dr. Stokes to the Eastern Long Island Hospital.

It was voted that in the future the x-ray laboratory at the hospital be known as the Dr. John Stokes Memorial Laboratory.\*

\* \* \*

The Women's Hospital Club of Malone has voted to furnish the Alice Hyde Hospital with an infant incubator.\*

\* \* \*

\* Asterisk indicates that item is from a local newspaper.

## Reduced Fatalities in Chinese Wounded

Lieut.-Gen. Robert Kho-sheng Lin, chief of the

that has been made in medical care of soldiers in his country since 1937.

China's most serious medical problem, during its war years has been the critical shortage of trained medical personnel for the army. This has required an emergency training of young medical aides. In Free China today, there are only some 6,000 fully-trained M.D.'s, of which one-half are serving in the army.

To partially offset this deficiency, eight thousand

they go into the field to help carry the burden of treating wounded soldiers. Six emergency medical service training schools were organized partly with the help of funds supplied by the American Bureau for Medical Aid to China, and maintained by funds obtained from the United China Relief through the National War Fund.

Proof of the worth of the emergency medical service training schools is shown in the fact that fatalities among Chinese wounded, which was as high as 50 per cent in 1937 and 1938, are now only about five per cent.

### Seesaw-ed Back to Life

the inventor, Dr. Frank C. Eve, an English physician. The victim is strapped to a seesaw (the child variety)

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[Continued from page 1716]

A new system has been put into effect at the Tarrytown Hospital which will enable the general public to obtain a doctor for emergency calls at all times, regardless of the hour, day, or night.

Miss Madge Grace Cook, superintendent of the hospital, has explained that a large bulletin board has been set up at the hospital listing the doctors' names alphabetically with phone numbers beside the names, and followed by a blank space in the right hand column. If an individual has exhausted

all efforts to obtain a doctor he can call the hospital. The hospital will then contact the first doctor on the list. If he takes the emergency call, his name card will be slid into the right-hand column and he will not again be called upon until the entire list is exhausted.

In addition to the bulletin board record, Miss Cook will keep a notebook, noting down the number of times a doctor has been called upon in an emergency situation and also the number of times he has been able to go out on these calls.\*

### At the Helm

Roland M. Dearing, of Denver, Colorado, has been appointed superintendent of Potsdam Hospital to succeed Dr. David Park, who resigned to accept a post as field representative of the American College of Surgeons, Clarence E. Premo, president of the board of directors of the hospital, has announced.

Mr. Dearing is a native of Indiana. From 1936 to 1940 he was administrative assistant, admission officer, and credit manager of the Children's Hospital, Denver.

He succeeds Dr. E. A. Lopez, who resigned from the post last spring.\*

. . .

Mrs. Charles Tod Newberry, of Irvington and Charles D. Millard, of Tarrytown have been elected to the Board of Directors of the Tarrytown Hospital.\*

. . .

Dr. Edwin D. Daily, who has been in charge of the Children's Bureau Emergency Maternity and Infant Care Program for servicemen's wives and babies, is leaving that post to serve with the Army in re-establishing civilian medical and hospital services in liberated countries.

At the annual meeting of the members of Northern Westchester Hospital Association directors elected for the 1948 class were William Ewing, Colonel T. P. Luquer, William J. O'Brien, and Lester C. Remsen.

Following the annual meeting of the members, the board of directors met and re-elected the following officers for the ensuing year: Carl Tucker, president; Ralph T. Walker, executive vice-president; Thatcher T. P. Luquer and Edwin G. Merrill, vice-presidents; Theodore C. Slosson, treasurer; and William J. O'Brien, secretary.\*

. . .

The election of Perry Hall as a director of Beekman Hospital in New York City has been announced.

Mr. Hall is a trustee of The Seeing Eye, Inc., a trustee and member of the finance committee of the United Hospital Fund, and a member of the War Finance Committee of New York State.\*

. . .

Dr. Robert Emmet Walsh, of New York City, consulting surgeon at St. Joseph's Hospital in Yonkers for several years, has been appointed chief of surgery at St. Joseph's, Mother Mary Josephine, Mother Superior of the Sisters of Charity of St. Vincent De Paul of Mount St. Vincent, has announced.

Dr. Paul P. Welsh, of Le Roy, has been elected vice-president of St. Jerome Hospital's staff, and Dr. G. Henry Knoll, of Le Roy, chief of the medical service.

Other officers named are: President, Dr. Robert A. Wohlfeil, of Elba; chief-of-staff, Dr. William D. Johnson, of Batavia; director of obstetric service, Dr. L. F. Quinlan, of Batavia; secretary and treasurer and director of urologic service, Dr. D. G. Ribby, of South Byron; director of pathologic service, Coroner Irwin A. Cole; head of nose and throat service, Dr. Carl C. Koester, of Batavia; head of ophthalmologic service, Dr. E. G. Wilson; director of dermatologic service, Dr. F. R. Hall.

. . .

### Newsy Notes

Dr. Charles F. Kivlin, for forty-five years a member of the surgical and medical staff of the Troy Hospital, was tendered a testimonial dinner by members of the hospital staff on June 22 at the Troy Country Club in recognition of his forty-fifth anniversary as a practitioner.

Dr. Kivlin, a native of Troy, was graduated from Albany Medical School in 1898 and spent the next year as intern at the Troy Hospital. Thereafter, he became a member of the medical and surgical staffs and served several terms as president of the staff.

During World War I he served overseas, with rank of major, in the Army Medical Corps.

The informal program at the dinner was conducted by Dr. Hugh V. Foley. The principal talk was given by Dr. Eugene McGillian, Yonkers, a native of Green Island who interned at the Troy Hospital and, while there, was assistant to Dr. Kivlin.

Dr. John T. H. Hogan, an associate of the honor guest, and Dr. John O. Sibbald, at present president of the staff, paid tribute to the honoree. The

[Continued on page 1720]



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(Continued from page 1718)

latter presented the guest with a gift on behalf of the staff.

Mason General Hospital, at Brentwood, was formally turned over to the United States Army on June 21 at dedication ceremonies on the grounds of the institution. Maj. Gen. Eugene Reybold, Chief of Engineers of the Army, made the presentation of the buildings, which were accepted by Col. Cleve C. Odom, commanding officer at the hospital. State Senator Perry B. Duryea gave the dedicatory address. Maj. Gen. Norman T. Kirk, Surgeon General of the U.S. Army, praised the maintenance of the hospital and the work of the staff, whose aim primarily is to return as many patients as possible to some form of duty. Only in his address, Maj. Gen. Thomas A. Terry, Commanding General, Second Service Command, traced the history of the hospital and expressed the Army's gratitude to the State of New York for their cooperation in permitting the establishment of the hospital in Brentwood.

Lt. Col. Henry F. Ford and Lt. Hugo Mantel, post chaplains, delivered the invocation and benediction, respectively. A portrait of Brig. Gen. Charles Field Mason, for whom the hospital is named, was unveiled by the General's granddaughter, Miss Mary Page Mason, of Virginia. Approximately four hundred persons, mainly officials and residents of surrounding communities, were guests at the ceremonies, which were also attended by the entire civilian and military personnel at the hospital.\*

A definite five-year program in nursing has been established jointly by the University of Buffalo and the Buffalo General Hospital. The program, leading to both the diploma in nursing and the degree of bachelor of science in nursing, will provide an integrated curriculum so that a student will be able to complete in five years both a university education, which normally requires four years, and nursing training, which normally takes three years.

Students are being enrolled now and the program will start in September. Applications are being taken at the General Hospital.

The five-year program will be offered in addition to the hospital's three-year basic program which leads to the diploma in nursing.\*

Doctors and nurses of Base Hospital 23 soon will be able to view in action members of their families living in this city and elsewhere. A reel of color film of parents, wives, children, and other relatives of members of the hospital staff has been completed and is on its way overseas, it was announced by Dr. Fraser D. Mooney, superintendent of Buffalo General Hospital, which organized and staffed the institution.

Col. John G. Knauer, of the Army, is superin-

tendent of the Base Hospital, but all the other fifty-five doctors and nearly all the one hundred nurses formerly were associated with Buffalo General Hospital. Among them are the head of the medical department of Base Hospital 23, Lt. Col. Werner J. Rose, and Lt. Col. Baxter Brown, surgery-head.

Among the interesting features of the film are views of babies, whom their fathers will see for the first time, and children now walking, who were in perambulators when the Unit left the country.

Base Hospital 23 was organized by Buffalo General Hospital in the summer of 1941, moved to Camp Mead, Maryland, on July 15, 1942, and went overseas in August, 1943.

The film opens with this inscription: "To the doctors and nurses, with sincere regards from Buffalo General Hospital."\*

The women's division of the War Finance Committee of Patchogue, with Mrs. Fannie Goldstein as chairman and Mrs. May Kane as cochairman, took as its particular objective in the Fifth War Loan Campaign the purchasing of hospital equipment. The buying of "mercy equipment" especially appealed to the women's organizations. Mrs. Frances S. Johnson was appointed women's campaign chairman.

The drive was started by the Hadassah, the Daughters of Israel Jacob, and the Sisterhood of the Jewish Center, who, working together, pledged to raise \$75,000.

Last year the women concentrated on hospital equipment and raised over \$128,000.

Twenty-two organizations were represented, including Patchogue Sorosis, Daughters of Israel Jacob, Daughters of the American Revolution, Senior Ladies Aid Society of the Lutheran Church, Episcopal Guild, Baptist Church Ladies, Sons and Daughters of Liberty, Elks Auxiliary, Women's Society of the Congregational Church, Companions of the Forest, Hadassah, American Legion Auxiliary, Catholic Daughters of America, Seton Hall Auxiliary, Order of the Eastern Star, Order of the Amaranth, Junior League, Methodist Women's Society for Christian Service, International Sunshine Society, Pulaski Social Club, Dorothea Rebekah Lodge, and Sisterhood of the Jewish Center.\*

New Rochelle Hospital's board of governors, meeting at the hospital, received a check for \$13,000 from the League for Service and another check for \$4,419.76 from a three-community church bridge committee.

Mrs. H. W. Herrick, retiring president, presented the League's check, which represented receipts from a Spring Fashion Show and Movie, the Hospitality Corner at the Hospital, and the Thrift Shop. The sum brings the total amount contributed to the Hospital by the League for the fiscal year, ending June, 1944, to \$18,000.\*

## BOOK MARKS CENTENNIAL OF AMERICAN PSYCHIATRIC ASSOCIATION

Marking the centennial of the American Psychiatric Association, thirteen noted specialists in

the field have collaborated in *One Hundred Years of American Psychiatry*, edited by J. K. Hall.



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# Honor Roll

## Medical Society of the State of New York

### Member Physicians in the Armed Forces

(By County Societies)

#### Supplementary List\*

*Broome County*  
Riley, George T. (Lt. Comdr.)

*Franklin County*  
Woodruff, W. Warriner

*Kings County*  
Siegartel, Morris (Lt. Comdr.)

*Monroe County*  
Fischer, Vincent E.  
Lutman, Frank C.  
Stiles, William W. (Lt.)  
Walker, Arthur W. (Capt.)

*New York County*  
Gordy, Louise J. (P. A. Surgeon  
(R) USPHS)  
Kruger, Alexander W. (Lt.  
Comdr.)

*Onondaga County*  
Paul, Neil M.

*Queens County*  
Klements, Joseph (Lt.)  
Murphy, John P. (Lt.)

*Ulster County*  
Sandler, Joseph G. (Lt.)

\* This list is the twenty-third supplement to the Honor Roll published in the December 15, 1942, issue. Other supplements appeared in the January 1, January 15, February 15, March 1, March 15, April 15, June 1, July 1, August 1, September 1, October 15, November 15, December 15, 1943, January 15, February 1, February 15, March 1, May 1, May 15, June 1 July 1, and July 15, 1944, issues.—*Editor*

## NEW GRANTS INTENSIFY THE FIGHT AGAINST POLIOMYELITIS

Outstanding universities, laboratories, and organizations from coast to coast have received twenty-seven grants, totaling \$1,128,770, through the National Foundation for Infantile Paralysis. The fields of virus research and physical medicine will be especially strengthened.

Two five-year grants provide for the establishment of "Units for Research and Physiology as Related to Physical Medicine" at the Medical School of the University of Minnesota and at Northwestern University Medical School. Studies will be pursued relative to the use of electricity, light, heat, cold, rest, exercise, and other physical measures in diagnosis and treatment, and the effects of these forces on nerves and muscles damaged by infantile paralysis.

The Unit at Northwestern University will be under the direction of Dr. A. C. Ivy, chairman of the department of physiology, and Dr. Maurice B. Vischer, head of the department of physiology at the University of Minnesota, will direct the program there.

A third five-year grant went to the University of Michigan School of Public Health, to expand its virus study unit, under the direction of Dr. Thomas Francis, Jr., professor of epidemiology. This unit provides for virus research and training of virologists, and studies will be undertaken to discover how the disease becomes established in a community and how it spreads. Special emphasis will be placed on developing inexpensive and practical methods of rapidly identifying the poliomyelitis virus.

A list of the grants and the institutions which received them follows.

*After-Effects.*—University of Minnesota, Minneapolis, \$320,000; Northwestern University Medical School, Chicago, \$175,000; University of Rochester School of Medicine and Dentistry, Rochester, New York, \$18,000; The Children's Hospital, Boston (two grants), \$11,900; University of California Medical School, San Francisco, \$6,500; Massachusetts General Hospital, Boston, \$3,600; Marquette University School of Medicine, Milwaukee, \$1,500. Total—\$536,500.

*Virus Research.*—University of Michigan School of Public Health, Ann Arbor, \$325,000; Michigan Department of Health, Lansing, \$23,360; University of Wisconsin, Madison, \$10,400; New York University College of Medicine, New York City, \$9,180; Wayne University College of Medicine, Detroit, \$9,010; Stanford University, California, \$8,000; University of Pennsylvania, Philadelphia, \$5,000; University of Minnesota, Minneapolis, \$2,450. Total—\$392,400.

*Education.*—Fellowships for Health Education, \$50,000; Georgia Warm Springs Foundation, Warm Springs, \$44,620; National Organization for Public Health Nursing, New York (two grants), \$36,150; National League of Nursing Education, New York, \$19,000; the Cleveland Rehabilitation Center, Cleveland, \$13,600; The American Physiotherapy Association, Palo Alto, California, \$15,000; Harvard Infantile Paralysis Commission, Boston, \$10,000; D. T. Watson School of Physical Therapy, Leetsdale, Pa., \$4,500; University of California School of Physical Therapy, San Francisco, \$4,000; Northwestern University Medical School, Chicago, \$3,000. Total—\$199,870.

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Lutman, Frank C.  
Stiles, William W. (Lt.)  
Walker, Arthur W. (Capt.)

*New York County*  
Gordy, Louise J. (P. A. Surgeon  
(R) USPHS)  
Kruger, Alexander W. (Lt.  
Comdr.)

*Onondaga County*  
Paul, Neil M.

*Queens County*  
Klements, Joseph (Lt.)  
Murphy, John P. (Lt.)

*Ulster County*  
Sandler, Joseph G. (Lt.)

\* This list is the twenty-third supplement to the Honor Roll published in the December 15, 1942, issue. Other supplements appeared in the January 1, January 15, February 15, March 1, March 15, April 15, June 1, July 1, August 1, September 1, October 15, November 15, December 15, 1943, January 15, February 1, February 15, March 1, May 1, May 15, June 1 July 1, and July 15, 1944, issues.—*Editor*

## NEW GRANTS INTENSIFY THE FIGHT AGAINST POLIOMYELITIS

Outstanding universities, laboratories, and organizations from coast to coast have received twenty-seven grants, totaling \$1,128,770, through the National Foundation for Infantile Paralysis. The fields of virus research and physical medicine will be especially strengthened.

Two five-year grants provide for the establishment of "Units for Research and Physiology as Related to Physical Medicine" at the Medical School of the University of Minnesota and at Northwestern University Medical School. Studies will be pursued relative to the use of electricity, light, heat, cold, rest, exercise, and other physical measures in diagnosis and treatment, and the effects of these forces on nerves and muscles damaged by infantile paralysis.

The Unit at Northwestern University will be under the direction of Dr. A. C. Ivy, chairman of the department of physiology, and Dr. Maurice B. Visser, head of the department of physiology at the University of Minnesota, will direct the program there.

A third five-year grant went to the University of Michigan School of Public Health, to expand its virus study unit, under the direction of Dr. Thomas Francis, Jr., professor of epidemiology. This unit provides for virus research and training of virologists, and studies will be undertaken to discover how the disease becomes established in a community and how it spreads. Special emphasis will be placed on developing inexpensive and practical methods of rapidly identifying the poliomyelitis virus.

A list of the grants and the institutions which received them follows.

*After-Effects.*—University of Minnesota, Minneapolis, \$320,000; Northwestern University Medical School, Chicago, \$175,000; University of Rochester School of Medicine and Dentistry, Rochester, New York, \$18,000; The Children's Hospital, Boston (two grants), \$11,900; University of California Medical School, San Francisco, \$6,500; Massachusetts General Hospital, Boston, \$3,600; Marquette University School of Medicine, Milwaukee, \$1,500. Total—\$536,500.

*Virus Research.*—University of Michigan School of Public Health, Ann Arbor, \$325,000; Michigan Department of Health, Lansing, \$23,360; University of Wisconsin, Madison, \$10,400; New York University College of Medicine, New York City, \$9,180; Wayne University College of Medicine, Detroit, \$9,010; Stanford University, California, \$8,000; University of Pennsylvania, Philadelphia, \$5,000; University of Minnesota, Minneapolis, \$2,450. Total—\$392,400.

*Education.*—Fellowships for Health Education, \$50,000; Georgia Warm Springs Foundation, Warm Springs, \$44,620; National Organization for Public Health Nursing, New York (two grants), \$36,150; National League of Nursing Education, New York, \$19,000; the Cleveland Rehabilitation Center, Cleveland, \$13,600; The American Physiotherapy Association, Palo Alto, California, \$15,000; Harvard Infantile Paralysis Commission, Boston, \$10,000; D. T. Watson School of Physical Therapy, Leetsdale, Pa., \$4,500; University of California School of Physical Therapy, San Francisco, \$4,000; Northwestern University Medical School, Chicago, \$3,000. Total—\$199,870.

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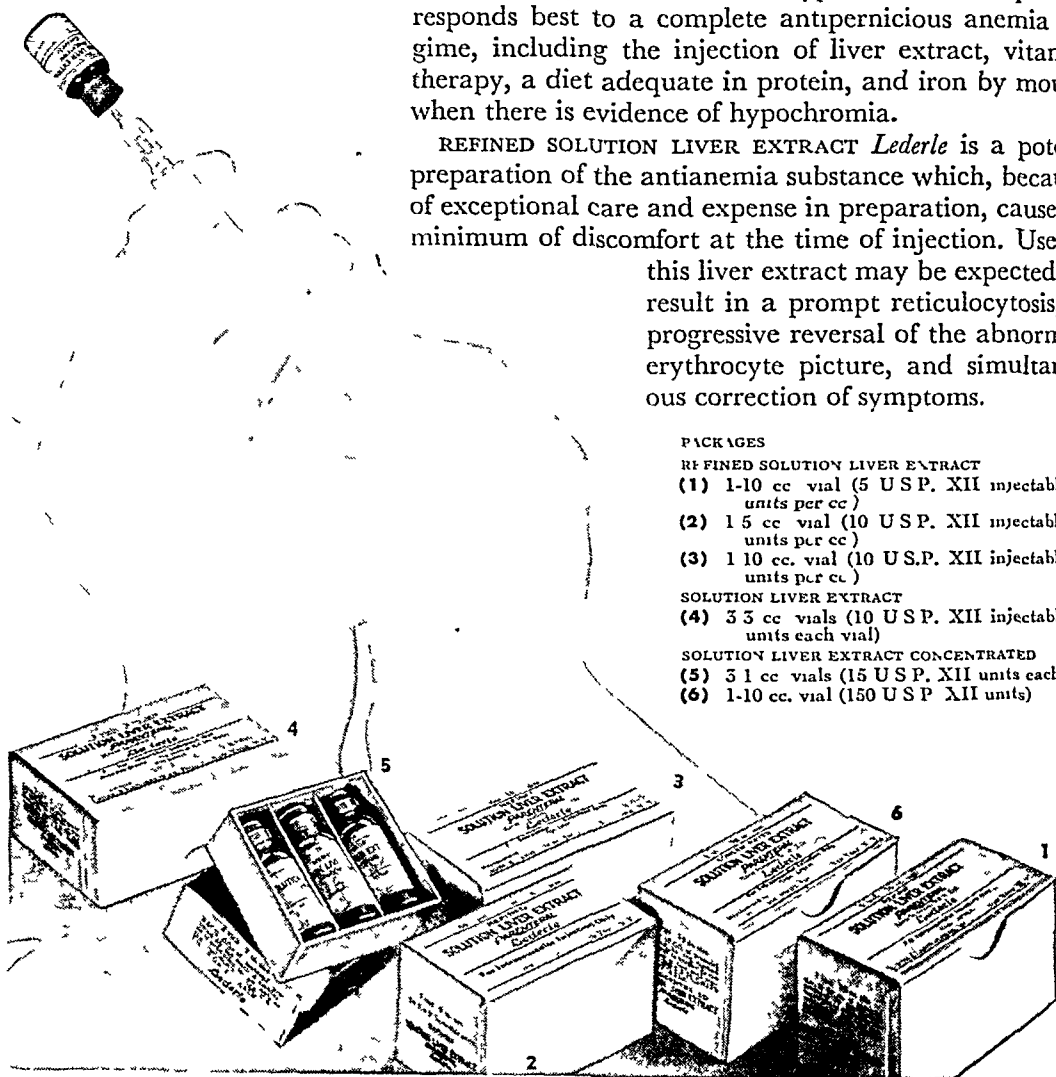
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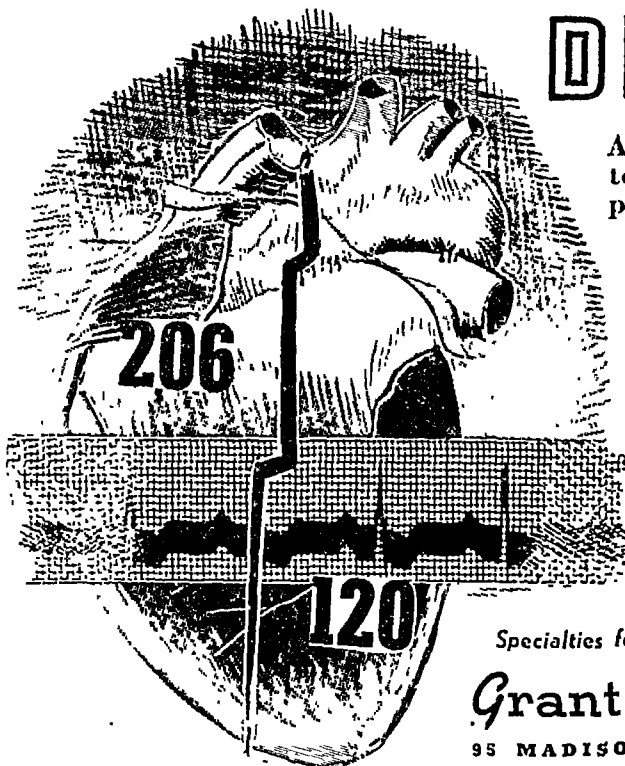
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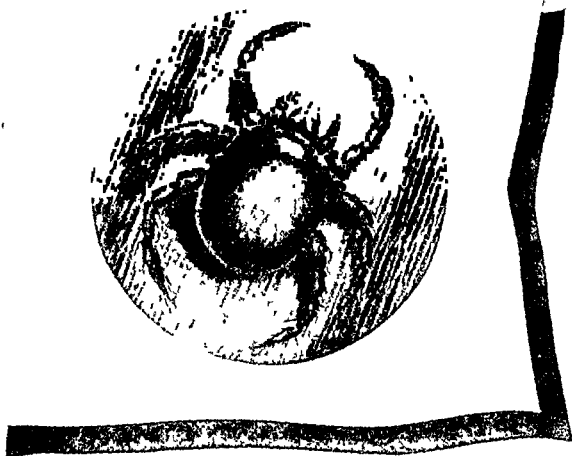
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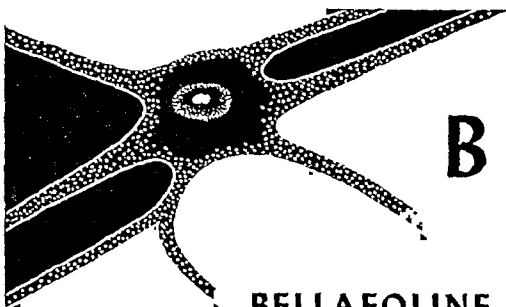
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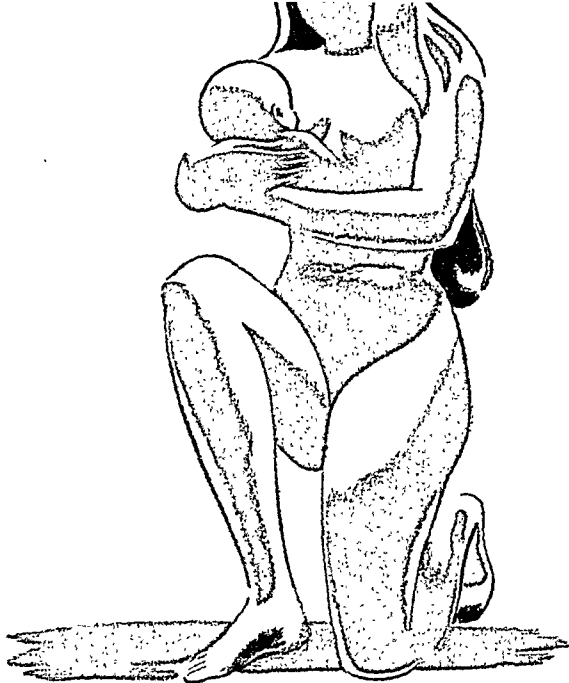
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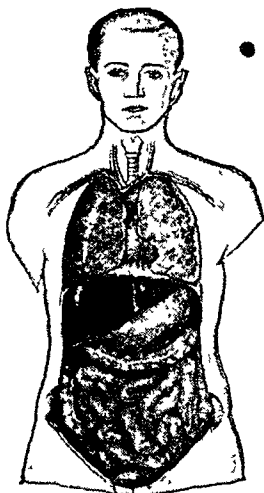
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HISTORY OF MEDICINE  
(To be appointed)

PHYSICAL THERAPY  
(To be appointed)

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*Investigators  
Agree...*

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Schieffelin Brand of Benestrol

(2, 4-di (p-hydroxyphenyl)-3-ethyl hexane)

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"... seems to be less toxic than diethylstilbestrol"—Am J Ob & Gyn 46, 146, 1943

"... At the therapeutic level this estrogen is relatively free from toxicity".—J Clin Endocrinology 2, 213 1942

"... an effective estrogen and is non toxic in therapeutic doses"—J.A.M.A. 123, 259, 1943



## is a Well Tolerated Synthetic Estrogen

OCTOFOLLIN Tablets:

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Sample and Literature on Request

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Pharmaceutical and Research Laboratories

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\*Reg. U. S. Pat. Off. The trademark OCTOFOLLIN identifies the Schieffelin brand of Benestrol

## THERAPEUTIC TEAMWORK

### Vitamin "B" Complex fortified with Vitamin "C"

Research has shown that vitamins B and C appear to work as a team in effecting beneficial changes in cellular physiology. This was clinically manifested by improvement in pathology of the upper respiratory mucosa and the retina when the two vitamins were given together. When only one was used, this favorable reaction did not occur.

Vitamin "B" Soluble (Walker) is derived from brewers yeast—its potency increased so that three capsules meet the minimum daily needs for vitamin B factors recommended by the U. S. Government.

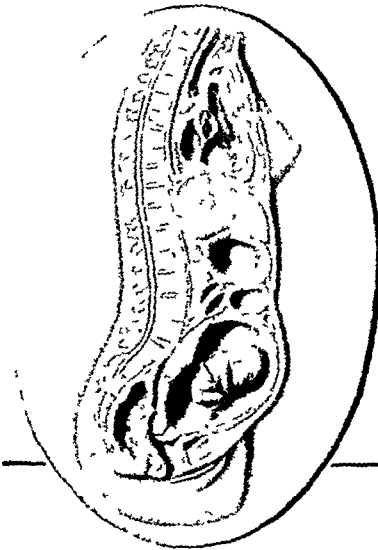
Professional samples sent on request to Myron L. Walker Co. Inc., Mount Vernon, New York.

**VITAMIN "B" SOLUBLE  
(WALKER)**

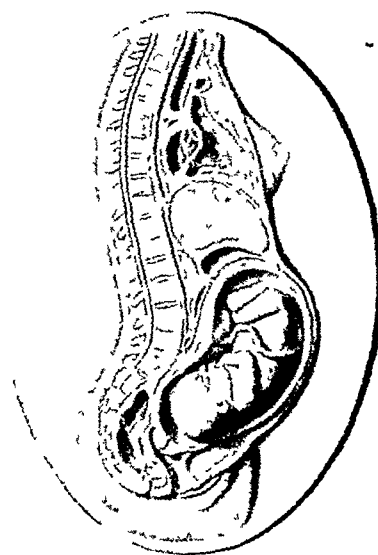


# ANATOMY OF PREGNANCY

*This series of life-size sculptured models  
was executed for S. H. Camp & Company  
by Charlotte S. Holt*

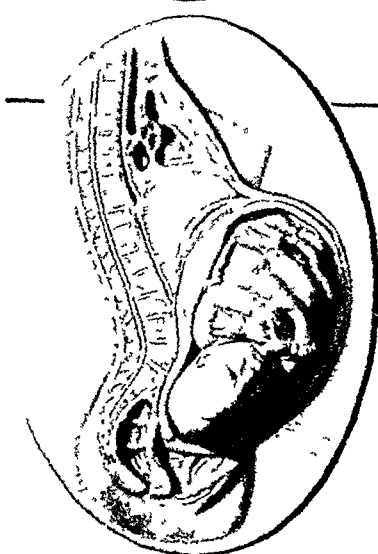


**4 Lunar Months**—Abdominal protrusion beginning. Uterus becomes abdominal organ. Fundus 4 cm below umbilicus. Approximate time of quickening. Normal visceral relationship. No appreciable change in body mechanics.



**7 Lunar Months**—Beginning tension on recti. Uterine fundus 5.5 cm. above umbilicus. Cephalic presentation determined. Visceral displacement (upward and lateral). Lumbar and dorsal curves increased. Relaxation of sacro-iliac and pubic joints.

**10 Lunar Months**—Overdistension of recti and diastasis are obvious. Fetus and placenta fully developed. Head engaging (LOP.). Marked visceral displacement (upward and lateral). Marked lumbar lordosis "pride of pregnancy." Relaxation of pelvic joints.



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AMINOIDS\*, a protein hydrolysate product, supplies amino acids and peptides derived from beef, wheat, milk and yeast. A dry granular preparation, it is palatably taken in any beverage, hot or cold.

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\* The name AMINOIDS is the registered trademark of The Arlington Chemical Company.

## Aminoids

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**A PROTEIN HYDROLYSATE PRODUCT**

### For Oral Administration

*More detailed literature supplied on request to Dept. 701*



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whose wartime load it has helped  
to lighten.*

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For professional publications of The Spa, and physician's sample carton of the bottled waters, with their analyses, please write  
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THE EMPIRE STATE'S CONTRIBUTION TO THE MEDICAL PROFESSION





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The keynote of today's therapy is "special care over the periods of the acute and subacute phases"—or symptomatic relief with the avoidance of undesirable side reactions

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REFERENCES—(1) Boyer, N. H. J. A. M. 122 307, 1913 (2) Clement, S. C. Med Rec & Ann 38 755 1914 (3) Gilbert, N. C. Quart Bull North Western Univ Med School 16 179, 1942 (4) Gilbert, N. C. & Kerr, J. A. J. A. M. 92 201, 1929 (5) Stroud, W. D. Diagnosis & Treatment of Cardiovascular Disease, Vol. 1, Chap. 22 (6) White, P. J., Bland, E. F. & Miskall, E. W. J. A. M. 123 801, 1943 (7) Wipperfurth, V. & Gunn, S. A. Med Times 70 197, 1942 (8) Ziskin, T. J. Lancet 58 292, 1937

INDICATIONS: Angina pectoris, cardiac edema, coronary sclerosis, Cheynes-Stokes respiration, and paroxysmal dyspnea

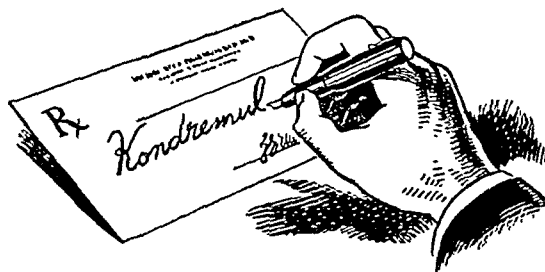
PACKAGED: As tablets (each containing 7½ gr calcium theobromine—calcium gluconate), in powder in 1 gr phenobarbital on is desired

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yet avoids G-I upset

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*Maltbie*



## SOLVING THE CONSTIPATION PROBLEM

*with*

# KONDREMUL

(Chondrus Emulsion)

Kondremul is a smooth emulsion of mineral oil, held in stable suspension by a tough film of Irish Moss (*Chondrus crispus*)—supplying non-irritating lubrication without unpleasant taste.



*Available in three forms:*

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(2.2 grs. phenolphthalein per table-  
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when abdominal pain, nausea,  
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Send for your copy of booklet—  
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### Case A. C.

SYMPTOMS: Sore throat—pain on swallowing

Temperature 100-102°

BACTERIOLOGICAL FINDINGS: Throat culture

showed hemolytic streptococci

DIAGNOSIS: Acute ulcerative stomatitis

TREATMENT: One White's Sulfathiazole


Gum Tablet chewed for 1/2 hour every

2 hours for 6 doses

RESULTS: Immediate improvement—

lesions healed and temperature normal

after 72 hours



This actual case report typifies the response to this new, effective method of providing local chemotherapy in oropharyngeal infections. Further indications include acute tonsillitis and pharyngitis, septic sore throat, infectious gingivitis and stomatitis caused by sulfonamide-susceptible microorganisms. Also suggested in the prevention of local infection secondary to oral and pharyngeal surgery.

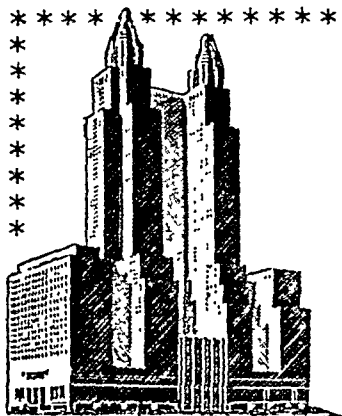
Important: White's Sulfathiazole Gum provides a high, sustained salivary concentration of locally active sulfathiazole (70 mg. per cent)—with negligible systemic absorption. Even with maximal dosage, blood levels seldom approach a level of 0.5-1 mg. per cent. Thus untoward systemic reactions are clearly obviated.

## White's

# SULFATHIAZOLE GUM

Available in packages of 24 tablets, sanitized in slip-sleeve prescription boxes—on prescription only.





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No servant problem...  
no long-term commitments...safe...centrally located...restful  
Special Rates for Long Periods  
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## Powerful Action with Fast Recovery

For rapid, powerful therapeutic pupil dilatation *the 10% solution* provides such definite advantages as quick, complete mydriasis . . . speedy recovery . . . no significant cycloplegia or toxic side effects.

A unique low surface tension isotonic aqueous vehicle\* adds the assurance of instant uniform spread and complete retention with resultant even dilatation

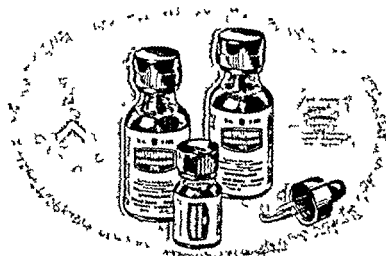
\*Contains Terosol OT 100 (diortyl ester of Sodium Sulfosuccinate) 0.001%

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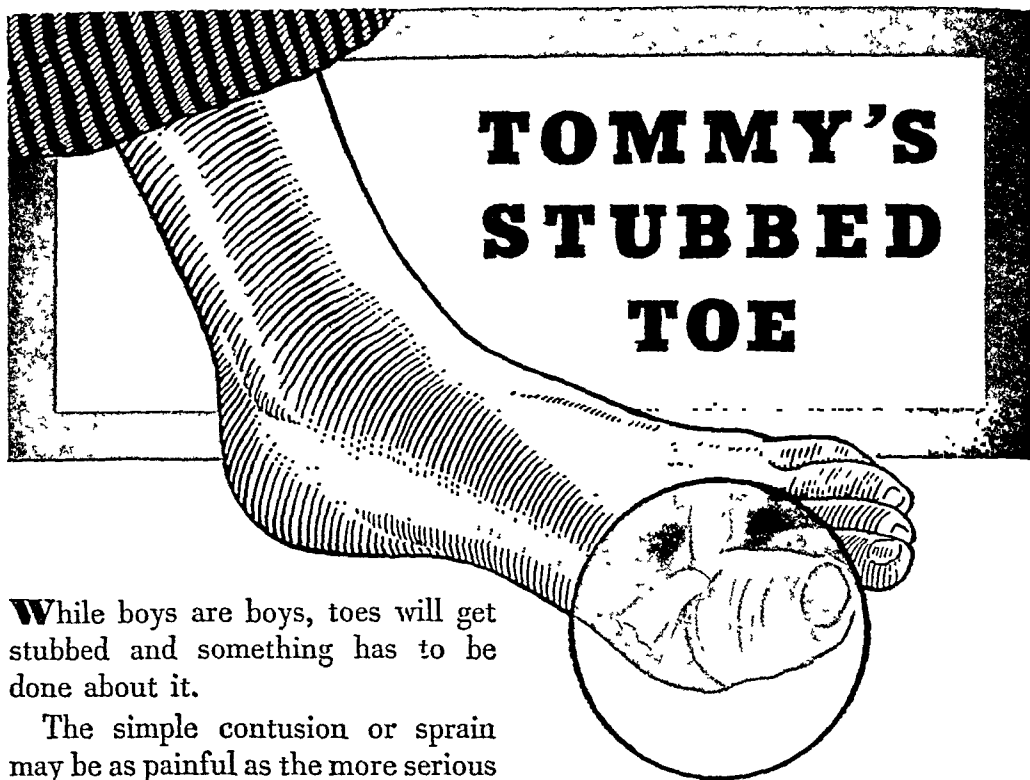
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Maltose . . . . .	.24%	Moisture . . . .	0.75%

Available carbohydrate 99% 115 calories per ounce  
6 level packed tablespoonfuls equal 1 ounce




*'Dexin' does make a difference*

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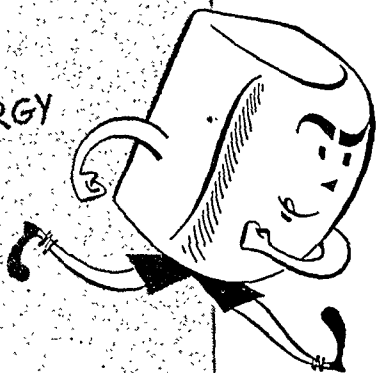


*Literature on request*

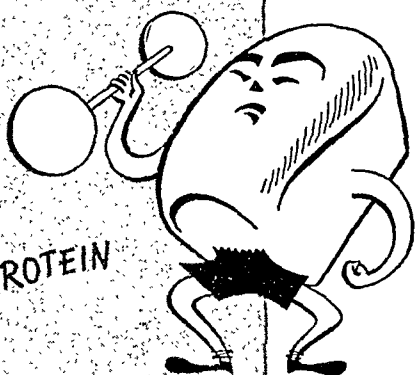
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# Bread plays a triple role

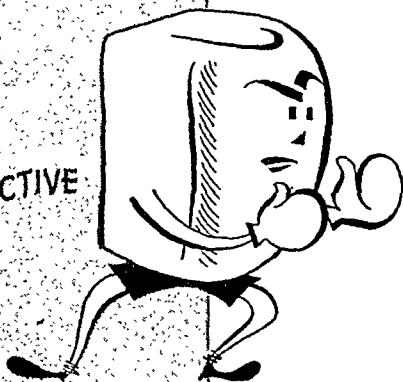
ENERGY



PROTEIN



PROTECTIVE



**I**N today's nutrition picture, physicians will find bread fills three important needs.

It is an energy food, a protein food, a protective food.

Bread has long been recognized as an abundant and convenient source of food-energy. It is plentiful, inexpensive and a favorite food with everyone.

As a source of protein, recent studies\* show that on the basis of average per capita consumption, bread supplies an important percentage of a person's protein intake.

And today bread is also a protective food. Specifications call for all white bread to be enriched. So it now supplies not only carbohydrates and protein but also vitamin and mineral factors — thiamin, riboflavin, niacin and iron.

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\*Block and Bolling, J. Am. Diet. Assoc. 20:69, 1944.

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The process used in manufacturing the "RAMSES"\* Flexible Cushioned Diaphragm produces a dome which is soft and pliable and can best be described as being as smooth as velvet.

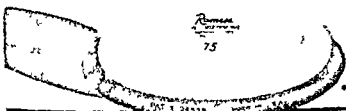
This velvet-smoothness lessens the possibility of irritation during use.

The "RAMSES" Flexible Cushioned Diaphragm is manufactured in sizes of 50 to 95 millimeters in gradations of 5 millimeters. It is available on the order or prescription of the physician through any recognized pharmacy.



*Ramses*  
TRADE MARK REG. U.S. PAT. OFF.

FLEXIBLE CUSHIONED  
DIAPHRAGM



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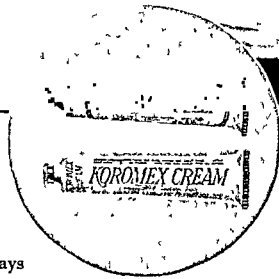
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Through all the years, the name Koromex has always stood for dependability. Koromex Jelly today has attained its highest spermicidal effectiveness. Koromex Cream (also known as H-R Emulsion Cream) is equally effective, and is offered as an aesthetic alternative to meet the physiological variants. Prescribe Koromex with confidence. Write for literature.


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**New Improved DRYCO** is a scientifically adjusted milk food, designed only for infant nutrition. Because of its high-

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**What DRYCO is made of**—DRYCO is made of superior quality whole milk and skim milk, with no non-milk substances except pro-vitamin A and vitamin D.

For optimal nutrition, DRYCO supplies ample potencies of vitamins A, B<sub>1</sub>, B<sub>2</sub>, and D, and important milk minerals.

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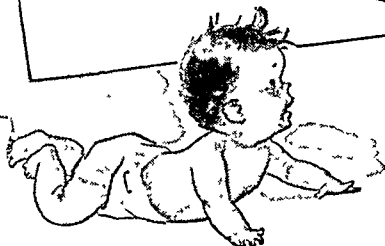
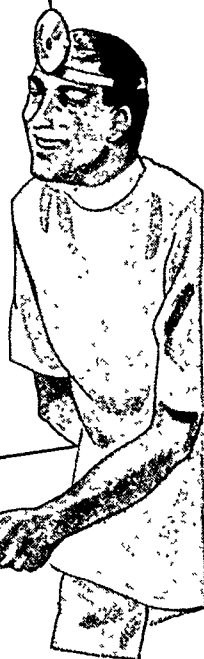


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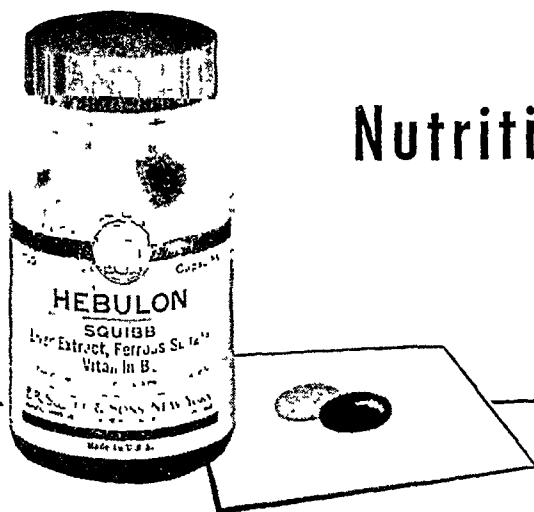


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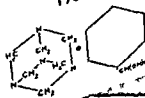
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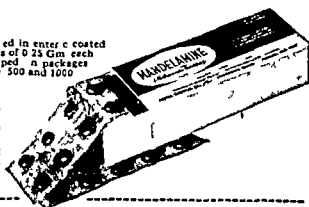
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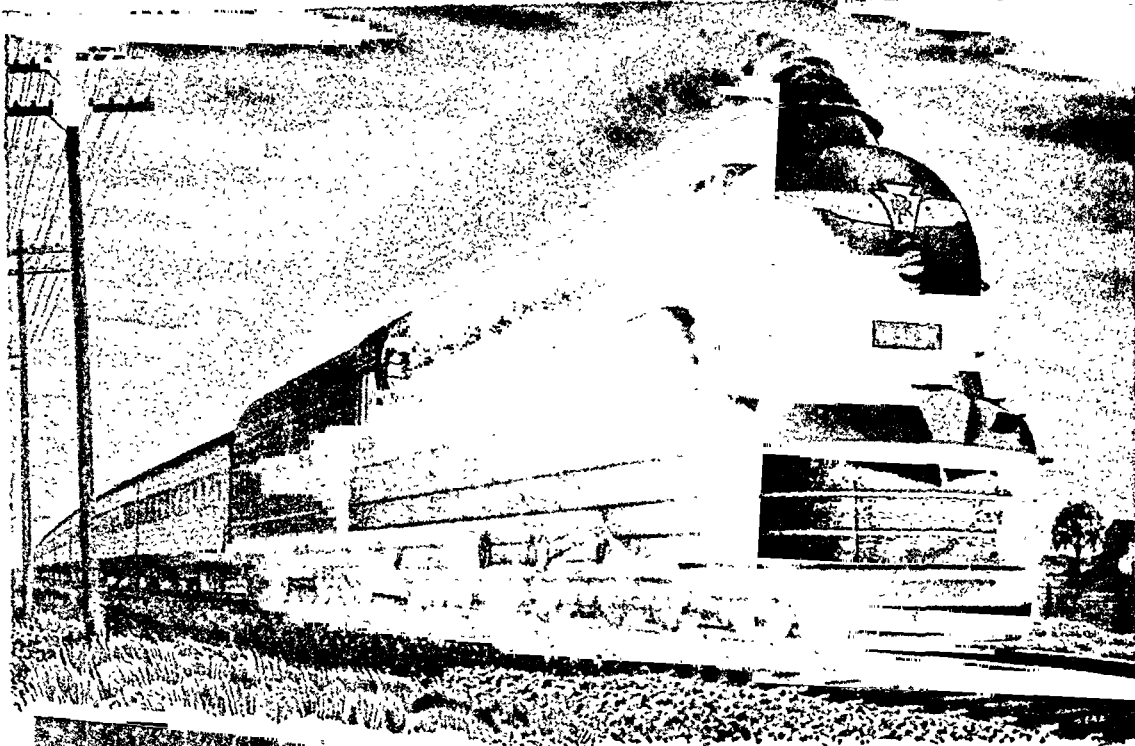
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# NEW YORK STATE JOURNAL OF MEDICINE

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## *Editorial*

### **"Gone, But Not Forgotten"**

At the June meeting of the Council of the Medical Society of the State of New York, the resignation of Dr Joseph Lawrence, Executive Officer of the Society, was accepted with regret. Dr Lawrence resigned to accept the offer of the A M A to organize, develop, and operate the office of the Council on Medical Service and Public Relations of the A M A located at 1835 Eye Street, N W Washington, D C

"The Washington office of the Council was opened on April 3, 1944, at 1835 Eye Street, N W. Dr Joseph S Lawrence, Executive Officer of the Medical Society of the State of New York, was secured as a consultant and the development of the office placed under his direction. Reactions to this office have been favorable. Much needs to be done in organizing the states to cooperate with the office. Each state should designate a representative who will be the contact man with the Washington office so that information may be promptly circulated through the proper channels. Conferences with the states should be held at intervals to insure maximum efficiency in functioning. Two such conferences have already been held with the New England States and New Jersey. On June 11 another conference was held with other states here in Chicago. These conferences should be held from time to time in the future. Hence, the Council recommends that

the proper organization of the Washington office should consist of a full time director, subject to the Council, that there should be a field agent whose duties it shall be to maintain personal contact with state associations and keep them informed of the activities of the Council, such clerical help as may be necessary, and, eventually, a legal adviser, who at first will be on a part-time basis. There will be close collaboration between the Washington office and the Bureau of Legal Medicine and Legislation.

"The Council realizes that it has been criticized because it has moved slowly with reference to the Washington office. We feel that it has been most important to move slowly so that anything done would not have to be undone. The matter is now on a solid basis which will result in a constructive program and redound to the credit and benefit of the Association. One hasty action might well have set us back years.

"The bulletins issued by the Council have been well received, but they can be improved on. When the Washington office is functioning with a full-time staff, great improvement can and will be made in them.

"The Council regrets to announce that Dr G Lombard Kelly, who has been secretary since January 1, feels that he cannot continue after July 1.

Dr Lawrence has functioned as consultant most successfully since April, and his long experience as Executive Officer of this So-

ciety has fitted him for the work in Washington as no other physician to our knowledge has been prepared in the entire country. His, so to speak, resident and outpatient familiarity with the medical profession on the one hand, and legislators on the other, together with his own genial personality and acumen should assure the success of the Washington office from the start. But he must be supported, in all fairness.

We are in agreement with the A.M.A. Council on Medical Service and Public Relations<sup>1</sup> that to move slowly is perhaps to move wisely. But caution can be overdone, over-emphasized, too long drawn out. Events are on the move. Every facility for streamlined action should be afforded the Washington office, as of course it will be, since the A.M.A. has the resources and now has the best-trained man available to put those resources to productive work.

Dr. Lawrence is to be congratulated, that he will presumably have the backing in the national organization of Dr. Louis H. Bauer,<sup>2</sup> newly elected Trustee of the A.M.A., and Dr. Thomas A. McGoldrick,<sup>3</sup> member of the Council on Medical Service and Public Relations. He will need all the counsel and help he can get in this pioneering work.

The heartiest congratulations of the members of the Medical Society of the State of New York accompany Dr. Lawrence in his new field of endeavor. We shall miss him at the Council and District Branch meetings and at the sessions of the county secretaries and the Legislative Committee. As the Scots say: nothing is lost that a friend gets. *And American medicine surely needs a friend in Washington.*

<sup>1</sup> J.A.M.A. 125: 8, 576 (June 24) 1944.

<sup>2</sup> *Ibid.* pp. 9,658 (July 1) 1944.

<sup>3</sup> *Ibid.* p. 660.

## Poliomyelitis

Changes of great interest and importance to physicians in the state have been made with respect to quarantine regulations affecting cases of anterior poliomyelitis and meningitis. All physicians are hereby urged to read carefully the July 17 issue of *Health News*<sup>1</sup> and its supplement in which these changes are published in detail by the New York State Department of Health.

So much of Regulation 15 as applies is herewith reprinted:

Regulation 15. Persons suffering from chicken-pox, bacillary dysentery, measles,\* *meningococcus meningitis or meningococcemia (septicemia)*, ophthalmia neonatorum, pneumonia, *poliomyelitis*, epidemic or streptococcus (septic) sore throat, typhoid and paratyphoid fever to be isolated. Whenever a case of one of the diseases mentioned in this regulation comes to the attention of the health officer, he shall establish and maintain isolation of such case for the period specified herein; when isolation on the premises is impracticable, the health officer may cause the removal of the patient to a suitable hospital... *Poliomyelitis: until end of the febrile stage.* Epidemic or streptococcus (septic) sore throat: until recovery. *Meningococcus meningitis or meningococcemia (septicemia): until end of the febrile stage.*

This change in Regulation 15 was made by the New York State Department of

Health on the unanimous recommendation of the Advisory Group on Poliomyelitis<sup>2</sup> following its meeting on June 7, 1944, and after careful review of all available evidence.

In brief, the recommendations of this group were:

1. That all patients in whom a diagnosis of anterior poliomyelitis is suspected should be cared for in a hospital and that these patients may be safely admitted to the general wards but that it might be desirable to separate the patients in special wards for ease in handling.

2. That it be recommended to the Public Health Council of New York State and the Board of Health of New York City that quarantine procedures in hospitals be eliminated but that concurrent disinfection of all excretions be continued.

3. That all patients should be treated whenever possible under the combined supervision of the pediatrician, orthopaedic surgeon, and specialist in physical medicine, and that during the acute stage the patient should be kept at complete rest....

4. A complete physical examination should be made to determine the residual muscle weakness or paralysis as soon as the

\* Matter in italics is new; matter in brackets is deleted.

patient's general condition permits and local muscle pain or soreness has subsided. . . .<sup>3</sup>

### Says *Health News*:

"The sulfonamide drugs have been remarkably effective in curing illness due to infection with meningococcus and in promptly eliminating the inciting micro-organism from the nose and throat secretions. Isolation of the patient after he has recovered and quarantine of household contacts have not been shown to be of sufficient value in control of the disease to warrant the inconvenience to the patient and his family. Likewise, isolation of the patient after recovery and quarantine of the household contacts have been ineffective in the control of poliomyelitis, in which the epidemiology is similar. Immediate isolation of every patient who presents evidence of acute illness, regardless of its nature and before as well as after diagnosis is made, would be of greater value in the prevention of spread of most communicable disease.

The Public Health Council, at its meeting on June 27, amended Chapter II, Regulations 15 and 17, of the Sanitary Code on the basis of the foregoing considerations. Essentially identical changes were made July 11 by the New York City Board of Health in the city Code."

"Health Commissioner Ernest L. Stebbins recently released figures," says the *Journal of the Medical Society of the County of New York*, "which indicate that up to the present (July 22) the incidence of poliomyelitis. . . is about normal for the season. . . ."

Upstate New York, however, is not quite as normal. The changes in quarantine regulations will therefore be of more immediate interest and value to physicians in the suburban and rural districts. Especially is this true in areas in which large quantities of war and other materials are being produced. Emphasis is placed upon early, adequate, and constructive treatment by the action of the Advisory Council and the changes in the Health Regulations, rather than upon apparently relatively ineffective quarantine measures. Says Dr. James E. Perkins, Director, Division of Communicable Diseases, State Health Department, in part,

"I think that the steps taken by the Public Health Council in modifying the isolation and quarantine regulations was very definitely a step forward, and one which results in requirements more in accord with present scientific knowledge. Nevertheless, in the presence of an epidemic of poliomyelitis, it is possible that an adverse reaction may occur on the part of the public, particularly if, when they inquire of their family physician, they do not get a satisfactory answer. I think it is important, therefore, to have the physicians throughout the State aware of these changes, and that the reason for the changes

myelitis infection and thus can never come under governmental restriction although perfectly capable of spreading the infection, it is possible to control the spread of the infection through government regulation. Emphasis should be where it belongs; namely, on proper and adequate treatment of the occasional, relatively rare individual who acquires the paralyzing form of the disease. Any comments along this line in the *JOURNAL*, editorially or otherwise, would materially assist us in this program. . . ."

The *JOURNAL* takes this early opportunity to present to the physicians of the state the reasons for the changes in the regulations governing the isolation of cases of anterior poliomyelitis and meningitis and asks the cooperation of all physicians in familiarizing themselves with the recommendations of the Advisory Council.

<sup>1</sup> *Health News* and Supplement, 21: 29 and 8-29 (July 17) 1944. This issue has been sent by the New York State Department of Health to every physician in the State. Additional copies may be had by writing to New York State Department of Health, Albany, New York.

<sup>2</sup> The Advisory Group includes the following members: Dr. Alan DeForest Smith, professor of orthopaedic surgery, College of Physicians and Surgeons, Columbia University; Dr. Philip Duncan Wilson, chief orthopaedist, Hospital of Special Surgery, New York City; Dr. William Benham Snow, associate professor of medicine, College of Physicians and Surgeons, Columbia University; Dr. James L. Wilson, professor of pediatrics, New York University; Dr. R. Plato Schwartz, associate professor of orthopaedic surgery, University of Chicago.

<sup>3</sup> *Health News*, July 17, 1944. Chairman, Council Committee on Public Health and Education, Medical Society of the State of New York.

## Mass Chemoprophylaxis

One of the major medical problems in military camps and in institutions is the prevention of epidemics. When serious ailments, such as meningococcus meningitis, appear on the scene, it is of the utmost importance to promptly stop the spread of the disease. The solution lies not only in the removal and the speedy cure of the

afflicted but in the effective extinction of the offending organisms which are harbored in the selective tissues of the contacts. The problem, then, is to prevent the contacts and potential carriers from becoming active carriers. Sulfonamide prophylaxis on a massive scale has been successful as a solution to this problem.<sup>1</sup>

In an Army camp infected with meningococcus meningitis, isolation of the organization in which the case appeared was immediately instituted, and cultures were taken of the nasopharynges of all contacts. The carrier rate was found to vary from 12.5 per cent to 42.3 per cent. Quarantine was not removed until the carriers were isolated. The latter were given 2 Gm. of sulfadiazine daily for two days, and then 1 Gm. for two days. No ill effects were observed in 897 carriers so treated. As a result of this course of prophylaxis all but 30 carriers were freed of meningococci. These were treated with sulfanilamide in the same dosage. All the remaining carriers but one revealed negative cultures after the second course. He was treated with sulfathiazole solutions in the nasopharynx, after which his culture became negative. Contacts were permitted to return to duty when two cultures were negative.

Since time and facilities do not always permit bacteriologic study of the entire personnel, 6 Gm. of sulfadiazine were routinely administered to everyone in the camp. No ill effects were observed, and there was no interference with normal activities. No case of meningitis had appeared seven days after the start of this mass therapy. After one month 928 showed the remarkably low carrier rate of  $\frac{3}{4}$  per cent. Such data may be interpreted as demonstrating the

virtual cure of meningitis carriers, for similar data have been reported from other quarters.<sup>2</sup>

Mass sulfonamide prophylaxis against other bacterial diseases has been investigated with further encouraging data. Thus, outbreaks of scarlet fever in a naval station,<sup>3</sup> streptococcus respiratory infections,<sup>4</sup> and dysentery epidemics<sup>5</sup> in institutions have been limited and controlled by judicious and appropriate mass sulfonamide administration. The use of these large groups for the purpose of diminishing the carrier rate is thus proved to be not only feasible and harmless but gratifyingly effective. The discovery of infections amenable to sulfa therapy in an institution, camp, or other site of mobilization would seem to call for study and treatment of the contacts in order to prevent or delimit the carriers which normally follow. It is these carriers who are responsible for the spread of epidemics which we now have good reason to believe can be stopped in their tracks by mass prophylaxis.

<sup>1</sup> Lewis, W. B., Bolker, H., and Klein, B.: *Mil. Surg.* 93: 443 (Dec.) 1943.

<sup>2</sup> Kuhns, D. M., Nelson, C. T., Feldman, H. A., and Kuhn, L. R.: *J.A.M.A.* 123: 335 (Oct. 9) 1943.

<sup>3</sup> Watson, R. F., Schwentker, F. F., Featherston, J. E., and Rothbard, S.: *J.A.M.A.* 122: 335 (July 10) 1943.

<sup>4</sup> Kuttner, A. G., and Reyersbach, G.: *J. Clin. Investigation* 22: 77 (Jan.) 1943.

<sup>5</sup> Lucchesi, P. F., and Gildersleve, N.: *J. Pediat.* 22: 319 (March) 1943.

### Competition for Prize Essays

The Merrit H. Cash Prize and the Lucien Howe Prize will be open for competition at the next Annual Meeting of the Medical Society of the State of New York.

The Lucien Howe Prize of \$100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The Merrit H. Cash Prize of \$100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York, who at the time of the competition are residents of New York State.

All essays must be presented not later than February 1, 1945, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 292 Madison Avenue, New York 17, New York.

CHAS. GORDON HEYD, M.D., *Chairman*  
Committee on Prize Essays

# THE MANAGEMENT OF WAR AMPUTATIONS IN A GENERAL HOSPITAL

RUFUS H. ALLDREDGE, Capt., (MC), AUS

THE problems confronting the orthopaedic surgeon on an amputation service in a general hospital are many and complex during war. The work consists chiefly of handling war casualties on whom the guillotine amputation has been performed six to twelve weeks previous to admission. Treatment is continued until the patient is properly fitted with a prosthesis and discharged from the hospital. A few primary amputations of the open and closed types are performed on the service. Some patients who have previously had closed amputations are admitted for further after-care and fitting or for care of complications resulting from the closed amputation. Opportunity is therefore presented for observation of the results of (1) the guillotine amputation, (2) the closed amputation, and (3) the open amputation with flaps secondarily closed.

Since the management of war amputations in a general hospital consists chiefly of handling guillotine amputations done under war conditions, the primary purpose of this presentation is to re-emphasize the value of the guillotine amputation and to summarize the important points necessary for the most successful immediate and late after care of these cases.

## Types of Cases

The type of case most commonly seen is the guillotine amputation in various stages. Generally, the cases fall into one of three groups as follows:

1. Completely healed stumps ready for fitting
2. Completely healed or unhealed clean stumps ready for revision or reamputation
3. Complicated cases showing osteomyelitis with or without sequestrum, chronic soft-tissue infection, extensive dermatitis, retraction of skin and soft tissues, and joint contractures. A patient may have one or all of these complications usually the direct result of improper operative technique and after-care.

Although closed primary amputations and secondary closure of stumps left with open flaps are inadvisable under war conditions, a number of these have been seen on the service. About half of these cases apparently healed with infection, but the stumps frequently are edematous

and painful. The remaining cases definitely have complications due chiefly to infection.

## Routine Procedure upon Admission to the Hospital

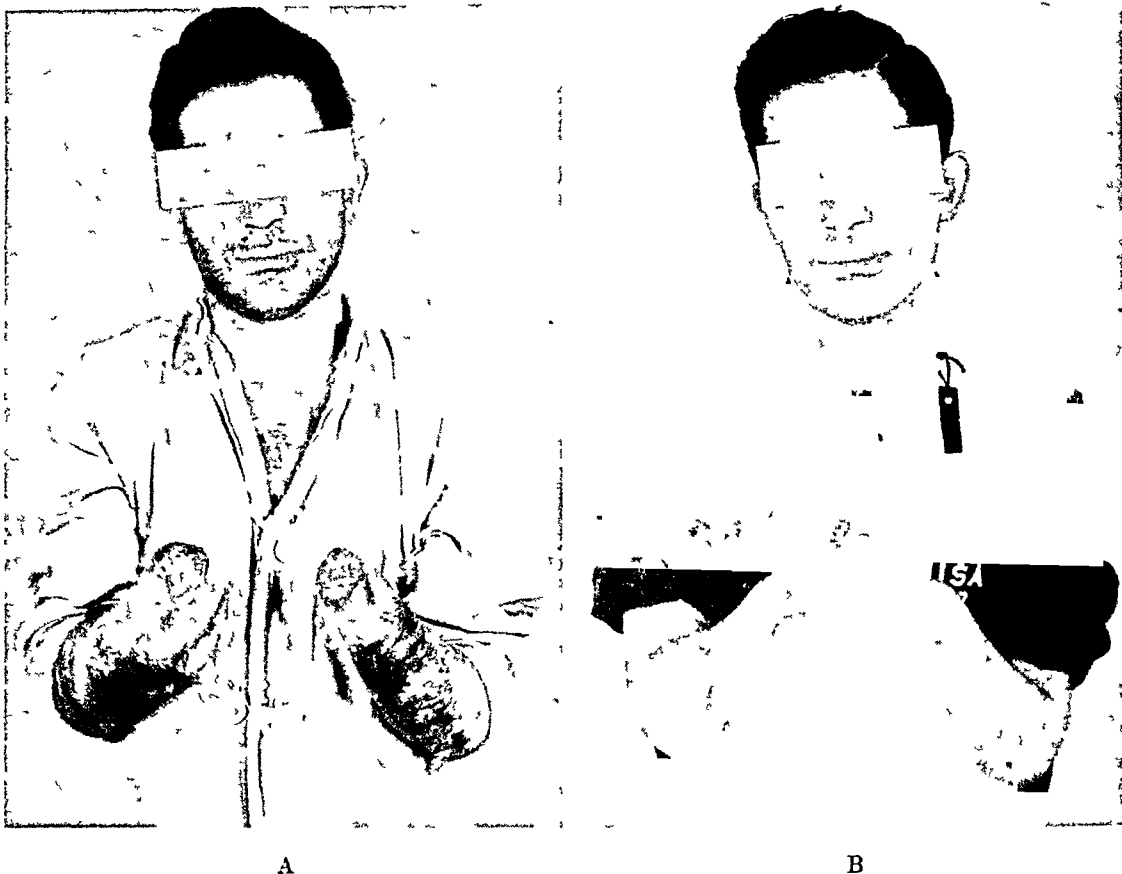
Patients may be admitted to the hospital either singly or in large numbers, and this admission may take place from two weeks to a year or more following amputation. The average patient, however, is admitted six to twelve weeks after operation. The routine care of the patient upon admission to the hospital consists, first of all, of a check-up on his general physical condition and routine laboratory work. It must be remembered that under modern war circumstances amputees frequently have multiple disabling conditions such as compound fractures, eye, ear, dental, chest, abdominal, neurosurgic, and urologic injuries. Some of them have double major amputations. The local condition of the stump is carefully determined and the amount and type of traction that the patient has had following amputation is ascertained. All open wounds are routinely cultured for aerobes and anaerobes, and cultures are repeated at intervals during the patient's preoperative treatment. The stumps and other injuries are x-rayed and patients are measured for the Army adjustable fiber prosthesis and for low-quarter shoes. This is done as soon after admission to the hospital as possible, preferably at the same time that the wounds are examined and cultured.

After these measures have been carried out, the actual treatment of the patient begins. This consists of systemic as well as local treatment. Most of the upper extremity amputations and many of those of the lower extremity may be ambulatory until they are ready for operation to fashion the final stump. Others require bed treatment. Weight loss and secondary anemia are treated by high vitamin, high caloric diets, and by vitamin and iron therapy and transfusions. Some chronically infected patients are treated with penicillin or sulfonamides.

Most of the patients who are not ready for surgery because of retracted skin or insufficient healing of a guillotine amputation are placed in skin traction with skin glue and stockinette. Those who do not need traction are referred to the physiotherapy department for exercises, wrapping of the stump with ace bandages, whirlpool, and ultraviolet light. Proper wrapping of the stump and active exercises of the involved ex-

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944.

From the Amputation Section, Surgical Service, Walter Reed General Hospital, Washington, D C



A

B

FIG 1 A—Bilateral guillotine amputation of forearms performed three months earlier. Injury was the result of explosion of a detonator in patient's hands. Traction was never applied, skin retracted and bone sequestered. If traction had been properly used the necessity of revision might have been obviated.

B—Same as Fig. 1A five weeks after revision was done with the use of penicillin. Stumps completely healed, painless, and ready for fitting with prostheses. Patient's mental attitude greatly improved.

tremity are the most valuable measures which physiotherapy has to offer in the treatment of these cases. Patients who have undergone amputation of an upper extremity are referred to the occupational therapy department for instruction in the use of the normal extremity and for understudy of other patients using an upper extremity prosthesis.

### Complications of the Guillotine Amputation

The guillotine amputation has been described in all its aspects by Kirk and McKeever<sup>1</sup> recently, and all who are interested are referred to their article. It is only when the proper technic of the operation and of the after-care is followed that the best results are obtained. Patients who have been properly handled have been received in excellent general condition and their stumps have developed few complications. The

most common causes of poor results from the use of the guillotine amputation are: (1) improper surgical technic, and (2) inadequate after-care.

If the amputation is performed too high or at the site of election it does not leave so good a stump for refashioning as does an amputation performed at the lowest possible level. It is better for reamputation to be done later at a higher level than to have a stump guillotined too short or at the site of election. If too much soft tissue is left distal to the bone end, proper drainage does not take place and complications may arise from lack of proper drainage. Closure of the stump too early after operation may give the same undesirable result. Unnecessary stripping or removal of periosteum causes sequestra and exostoses.

The lack of proper after-care of the guillotine stump is the most common and most serious mistake made. If skin traction is not applied properly and maintained constantly even when a patient is being moved, the skin and other soft

<sup>1</sup> Kirk, Norman T., and McKeever, F. M.: J A M.A. 124: 1030 (April 8) 1944.

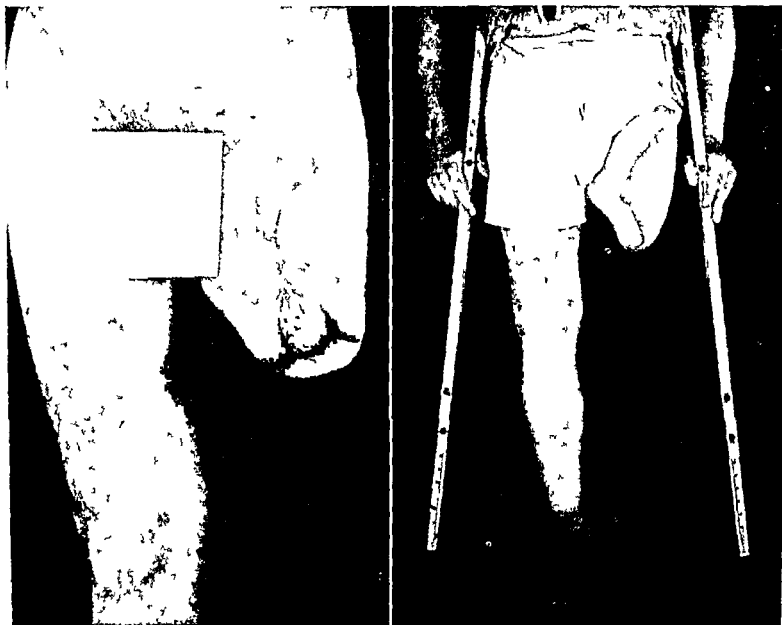


FIG. 2 A—Healed guillotine amputation of the thigh. B—Protruding femur stump. When the bone is not removed or callus grafts, and closure of normal skin over the protruding bone without shortening. Penicillin used pre- and postoperatively.

tissues retract the bone ends protrude the stump becomes painful, and flexion contractures develop. The bone ends may later undergo sequestration and various forms of infection occur in the stump. It follows therefore that neglect in the immediate after care of the guillotine stump results in poor general condition of the patient as well as delay and difficulty in obtaining a good final stump.

#### Definitive Treatment of the Guillotine Stump

The treatment of the guillotine amputation stumps must be individualized to a great extent, as they vary considerably in many respects. It is possible to fit many guillotined arm, forearm and thigh stumps without any further surgery. More often, however, the guillotine stump needs

some further type of operation to make the best possible stump for the application and use of an artificial limb. The proper time at which the final operation is done, and the type of operation performed depend upon many factors including the condition and appearance of the stump as well as the x-ray findings and the type of organisms present. If (1) no gross infection is present, (2) x-rays show no evidence of active bone infection or sequestra, (3) good skin is well down over the end of the stump, (4) there is little or no edema, and (5) the wound is clean and granulating then the stump is said to be physically ready for the final operation. It is very important, however, that the type of organisms present in the wound be determined in every instance prior to operation. The most common organisms found in the stumps are the diphtheroid



A

B

FIG. 3. A—Guillotine amputation (disarticulation) of the knee joint showing result of the lack of the use of traction. Reamputation above the open area was necessary. Compare with Fig. 10.

B—Thigh stump showing results of improper care (properly applied skin traction). Note retraction of all soft tissues, protrusion of bone end, and sequestrum. Such a result may be expected if skin traction is not used.



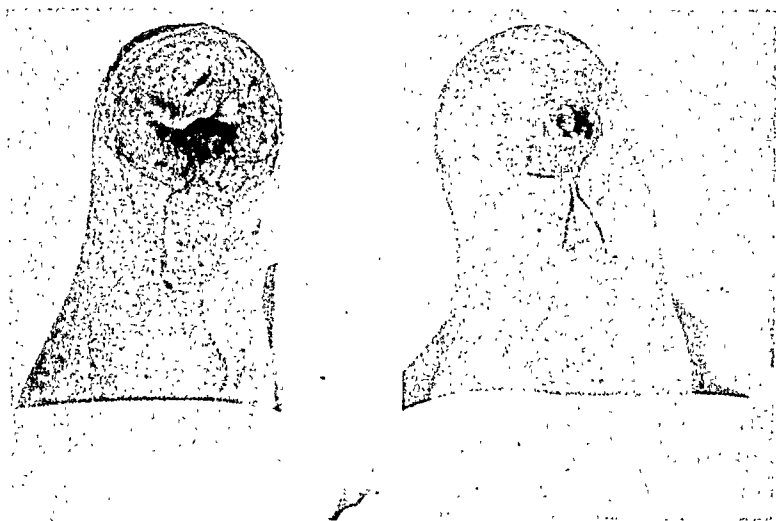
A

B

FIG. 4. A—Below-knee stump with skin graft. The result would have been far better had traction been continued until the skin stretched down over the stump end, when a simple revision could have been done. Such a stump cannot wear a prosthesis until the graft is removed and the stump closed with normal skin.

B—Thigh stump with skin grafted. Impossible to fit with satisfaction. Remarks about Fig. 4A apply here. Compare with Figs. 5 and 6.



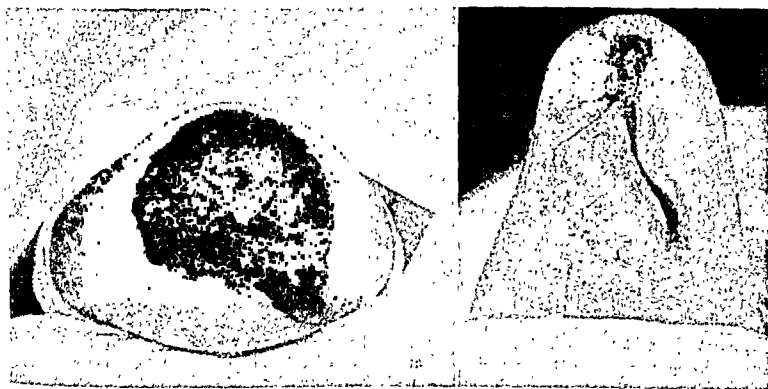


A

B

FIG. 5. A—Supracondylar guillotine seven days postoperatively.

with. . . . . Closure at this time was very simple, . . . . . an open wound. The result was a full . . . . . leg, . . . . . and the bearing stump. . . . . Compare with Fig. 5A.



A

B

FIG. 6. A—Guillotine amputation of thigh four weeks after amputation and properly applied traction. Stump end is clean and skin has not retracted.

B—Same after three more weeks of nothing but skin traction with stockinette. Revision and closure was a simple matter at this stage.



A



B

FIG 7 A—Guillotine disarticulation of the hip joint about four weeks postoperatively.  
B—Same after healing with skin graft. Scar should be removed and normal skin edges closed for best functional result with prosthesis.



A



B

FIG 8. A—Guillotine amputation through the foot with good clean granulating stump end Syme amputation performed at this stage with penicillin.

B—Same four weeks after Syme amputation performed with good Syme stump.

organisms, *Pseudomonas aeruginosa*, *Bacillus proteus*, and various types of streptococci and staphylococci. Patients are given sulfonamide or penicillin therapy pre- and postoperatively, depending upon the organisms present in repeated cultures and smears from the wound. Local treatment of the wound may be necessary to clear it of organisms not susceptible to chemotherapy.

These measures include whirlpool baths, ultra-violet light, chlorinated solutions and oils, 4 per cent chloral hydrate for *B. proteus*, and proflavin 1:1000 for *Ps. aeruginosa*. Local dressings with Dakin's solution or pectin jelly clean odorous stumps with exudates in a very short time.

Reamputation at a higher level when this is permissible may generally be done at or near the

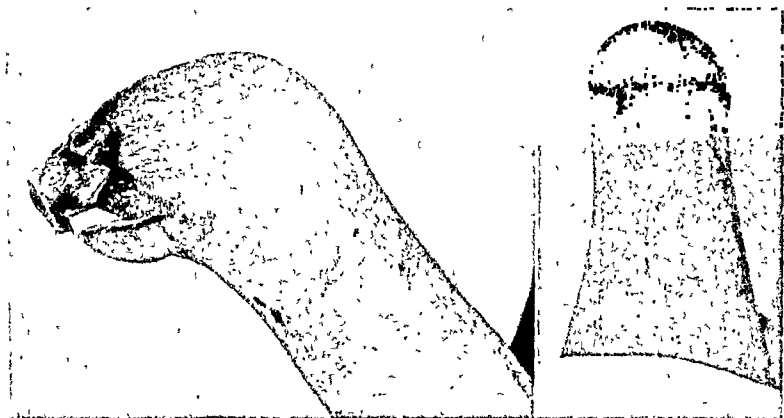


FIG. 9. A—Below-knee guillotine amputation with retracted soft parts, protruding bone stumps, and sequestration. B—Same two weeks after supracondylar tendoplasty amputation. Penicillin used pre- and postoperatively.

stump end. A simple revision operation and closure of the stump end with good skin is performed when no further shortening is desired. Reamputation is performed if the remaining stump is longer than necessary for the best function. If the stump is too short to function well with a prosthesis, reamputation above the joint is also indicated for better results.

Osteomyelitis with sequestration should be surgically treated by adequate incision, sequestrectomy, dressing the stump end open, splinting, infrequent dressings, and pre- and postoperative sulfonamide or penicillin therapy. Healing occurs fairly promptly, much more quickly than in other types of osteomyelitis.

Stumps which have retracted skin and those in which conservation of length is essential are kept in traction as long as the skin continues to lengthen and until the wound is clean, before revision is attempted. All guillotine amputations are far better handled by continued traction than by attempts at skin grafting. If applied to lower extremity stumps, skin grafts will eventually require removal, as they will almost always break down from the use of a prosthesis. Operative procedures for removal of skin grafts are far more extensive and the results less satisfactory than the use of continued traction followed by revision and closure of the stump. If an amputee

requires a skin graft for any reason, the graft should never be taken from the skin of the amputation stump.

### Postoperative Care

The essential points to be followed in the postoperative care are drainage of the wound, immobilization, elevation, and continued sulfonamide or penicillin therapy. All stumps are drained with a rubber dam drain in each end of the wound. The drains are removed at the end of two to five days. Below-knee and forearm stumps are best immobilized by the use of a sugar-tong plaster splint applied over padding with an ace bandage wrapped snugly over the dressing. Skin traction is used on stumps in which swelling may cause tension on the sutures. Arm stumps are best immobilized on a pillow, and thigh stumps by a spica bandage or by traction. The limb is kept elevated, and patients, except those who have forearm stumps, are never allowed to get up until the sutures have been removed. Occasionally, when circulation is questionable, novocaine sympathetic block or low caudal anesthesia is given postoperatively. Preoperative sympathectomy should be carefully considered in all patients who have poor circulation.

The stump is kept well wrapped with ace bandages from the time of the first postoperative dress-



FIG. 10. A—Guillotine disarticulation of knee performed for compound fracture of the upper third of the tibia and fibula and total loss of circulation. This is the appearance of the stump four weeks postoperatively. Nearly ready for operation. Disarticulation of the knee is always preferable to amputation higher up.  
B—Same three weeks after supracondylar tendoplastic amputation for full end-bearing. Done with penicillin.

ing until the prosthesis is applied. It is then kept wrapped for three to six months, when the limb is not actually being used. When the stump is well healed, active exercises are begun and kept up indefinitely. Massage may be useful if properly given, but may be definitely harmful if not administered with the greatest care and under proper supervision.

### Prosthesis

The patient's limb is ordered from actual measurements upon admission to the hospital and is usually on hand in the limb shop, ready and waiting, by the time the stump has healed. Except in cases of full ischial-bearing thigh stumps, a plaster mold of the stump is taken, and a leather socket is made to fit the individual stump. The prosthesis can be applied in less

than a week after the stump is ready for fitting.

The Army prosthesis is made of fiber, except for the leather socket. The limb is adjustable for shrinkage of the stump which takes place as it is worn. Both a split hook and a hand are provided for arm amputees, who are properly instructed in their use in the occupational therapy department. The department of physiotherapy conducts walking classes in which patients with lower extremity amputations are first taught balancing exercises, and then how to walk with their prostheses. When the patient reaches a point where he is properly fitted and shrinkage is at a standstill, he is given a final check-up and proper adjustments are made before he is discharged from the hospital. He may use the adjustable fiber limb for an indefinite period of time.

# REPORT OF EIGHTY-FIVE FENESTRATION OPERATIONS FOR OTOSCLEROSIS

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THIS is the second report of my surgical experiences with the fenestration operation for otosclerosis. The first report, in the *Archives of Otolaryngology*, February, 1943, consisted of thirty-two operations. This article includes fifty-three additional operations.

## Technic

In order that a better understanding of this report may be had, a very brief description of the technic follows.

An adequate exposure of the cortex is made through an eudaural incision. This is definitely the best approach, because of the facility with which the bleeding is controlled. The mastoid cortex is then removed and the entire cellular contents of the mastoid cavity is exenterated to the bony plate covering the dura and lateral sinus in the posterior fossa and to the dural plate in the middle fossa. This step is necessary because it shortens the after-treatment and promotes rapid healing and epidermatization of the operative cavity. The horizontal and posterior semicircular canals are exposed and thoroughly delineated. Then the dense bone forming the external attic wall is removed, skeletonizing and allowing the thin bone forming the roof of the middle ear and the posterior wall to remain in position temporarily. The removal of the external attic wall is carried forward until there is a complete exposure of the incus and the head of the malleus. It is also removed above, exposing the bony plate in the floor of the fossa. A thin elevator is then used to separate the cutaneous membrane lining the canal from the skeletonized wall. This wall is then carefully removed through the annulus, preserving the drum and lining membrane intact. The incus is removed together with the head of the malleus, the facial ridge is lowered, and a plastic skin flap is constructed to cover the fistula and seal off the epi-tympanic space. The fistula is then made, the flap placed in position, and the dressing applied.

It was pointed out in the first report that this is essentially an operation for conduction deafness and that it was impossible to differentiate the otosclerosis cases from other types of the so-called catarrhal deafness. Since it is not possible to make an absolute diagnosis of otosclerosis without a histologic examination, the term "clinical otosclerosis" will be used to des-

ignate the types of conductive deafness discussed in this article.

For those of you who are not familiar with this problem, it may be briefly stated that clinical otosclerosis is characterized by the formation of new bone in the otic capsule, or the dense ivory bone forming the outer wall of the internal ear. These bone deposits may take place without impairment of hearing. When they involve the bone surrounding the region of the oval window, the footplate of the stapes becomes firmly fixed, blocking the pathway for air-borne sounds to the perilymph and endolymph of the internal ear, causing a conduction deafness. The fenestration operation makes it possible to restore practical hearing through the construction of a new pathway for air-borne sounds to the circulating fluids of the internal ear, making what is in effect a new oval window directly above the old one with only the facial nerve separating the two windows; thus the endolymph and perilymph are again mobilized for the transmission of air-borne sound to the organ of Corti.

The results in the first thirty-two cases were approximately one-third successful. They have greatly improved in the fifty-three additional cases.

The marked improvement in the results dates back to the new location of the fistula. In the first eighteen operations of the total of eighty-five, the fistula was made over the length of the external semicircular canal posterior to the ampullated end, with the head of the malleus removed and the incus in its normal position. In the rest of the series, sixty-seven in number, the fistula was moved forward over the dome of the vestibule anterior to the ampullated end of the horizontal semicircular canal, with the head of the malleus and the incus removed. The results immediately improved. Placing the fistula anterior to the ampullated end of the semicircular canal allows it to be made wider. The bone forming the dome of the vestibule is much thinner and there is no bone at the bottom of the fistula as there was when it was made over the length of the external semicircular canal. The removal of the incus along with the head of the malleus permits the thin part of Shrapnell's membrane to be placed over the fistula. These factors together have greatly reduced the number of closures of the fistula and have materially contributed to the improved results. The ideal indication for the fenestration operation is a

typical clinical otosclerosis syndrome before there is a serious impairment of the auditory nerve. This would include an intact drum membrane, a drop in the hearing below the level of practical conversation, adequate bone conduction, a patent eustachian tube, and an absence of any evidence of a middle-ear or mastoid infection.

It will be noted that this modifies somewhat the indications set forth in the first report. An intact drum with a firmly healed perforation, a small calcareous deposit, or a retraction or loss of color of the drum does not mean that a successful result may not be obtained. Likewise, an old infection of the middle ear and mastoid which has long since subsided with an intact drum, does not prevent a good result. These findings may then be considered within normal limits for this work.

The one fact requiring special emphasis is that in a vast majority of the cases of clinical otosclerosis there is a gradual loss of hearing extending over a considerable period of time before there is a serious impairment of nerve function. It is during this stage that the operation offers the best chance for a successful and lasting result. If allowed to continue uninterrupted, the loss of nerve function will reach a point where the individual cannot be helped by the operation.

It is important that the large number of people afflicted with this disease be informed of the possibilities of surgical relief while there is still sufficient nerve function remaining to convey the sounds to the internal ear.

There has been considerable criticism of this work because of the closure of the fistula in some of the cases. There is no way, at the present time, to guarantee that it will not close; however, in properly selected cases—that is, those with clinical otosclerosis with a sufficient reservoir of nerve function—there is an excellent chance of securing a successful and lasting result.

What are the prospects without operation? There is a gradual and progressive loss of hearing followed by a slow deterioration and loss of nerve function, resulting finally in a severe or total deafness with no prospects of help from an operation, hearing aid, or from any other source.

What does the operation require of the patient? With the correct indications and in the hands of a skillful and properly trained operator there is a minimum risk from the standpoint of danger and a comparatively brief period of convalescence. In the early stages of this work, there was often a very long and tedious treatment necessary, due largely to the fact that it was not thought necessary to completely exenterate all the cells of the mastoid. Secondary infections occurred in the remaining cells and

sometimes months were required to complete the after-treatment. Experience has largely corrected this. The mastoid cells are completely removed and the secondary infections have been definitely curtailed or completely controlled. It requires approximately twelve days' hospitalization, followed by a comparatively short period of postoperative local treatment while the cavity dermatizes and becomes completely dry.

There is considerable dizziness and discomfort without pain immediately following the operation. This rapidly improves following the first complete dressing, usually done on the fifth day.

### Mixed Cases

The next problem, one which is very perplexing and about which there is much to be learned, is the mixed case, or the one with both hearing impairment and partially damaged nerve. How far should the impairment progress before the operation is contraindicated? We are greatly handicapped by the lack of an accurate method of testing the residual nerve function. For instance, I have just examined a patient with a hearing loss of approximately 50 per cent in both ears by air as shown by the audiometer and no response to any of the tuning forks in either ear, indicating a complete absence of bone conduction. How can this amount of hearing by air be explained, if bone conduction is an accurate test of nerve function? This phase of the work offers a tremendous field for further research.

If the impairment of nerve function is not too marked, there is still a chance of checking the progress of the disease and maintaining serviceable hearing for the individual. The fact that the partially damaged nerve diminishes the prospect for a successful result should be fully explained, and the patient should be given the chance the operation still offers if it is desired.

Lempert<sup>2</sup> states that a result should be considered wholly successful if the hearing is restored to the practical level for conversation; that is, around the 25-decibel level or better, with which opinion I concurred in my first report. However, if an individual with a progressive clinical otosclerosis could have the disease arrested and maintained at the 30- or even 40-decibel level, this would be a real service to that particular individual, and is a thought well worth considering in the patients with a partial impairment of nerve function.

### Advanced Cases

This group includes the patients with a marked loss in both air and bone conduction, as well as the ones diagnosed as having nerve deafness.

Lempert reported some successful results with

this form of deafness I operated upon six patients in this whole series, with air and bone conduction showing a marked loss, after carefully explaining that the prospects of a successful result were not good and securing the patients' full consent under those circumstances. There were no successful results in any of them. In two of them, there was definite loss in the slight function remaining. It should be noted that there was no practical function present in this type of deafness, therefore, the patient had little to lose by trying for a result on the worst ear. A successful result in this type of disease could be explained only by the fact that there was a concealed reservoir of nerve function present before operation.

There seems to be no known method, at this time, of successfully testing and determining the presence of this hidden reserve function prior to the fenestration. From my brief experience with this phase of the work, there is a very definite chance of further retrogression or loss of function following an operation in these cases. This should be carefully explained to the patient, if it is attempted.

### Secondary Operations

Two of the original patients with the incus in position and the fistula over the length of the semicircular canal were reoperated upon. In both of them, the fistula was completely covered with new bone. In each one the bone was removed and the hearing was restored. In one it remained and has continued open with good practical hearing, now almost four years since the original fenestration. The other one closed and hearing returned to its preoperative level.

One of the novofenestra was revised. A new lid of bone was found over the fistula, attached to the membranous labyrinth in the dome of the vestibule. It was removed with infinite care and great difficulty, without seriously injuring the membranous labyrinth, the hearing improved, and part of the hearing gain has been maintained more than a year, as well as checking the progress of otosclerosis.

The hearing recessions in some of the fenestrations over the dome of the vestibule are due to a fibrosis as well as to osteogenesis.

If there is a well-defined new lid of bone over the fistula, as in the one just described, there is a chance of carefully removing it and securing a successful result. If there is a fibrosis with adhesions to a membranous labyrinth, there is too much danger of a dead labyrinth to justify further attempts to remove the adhesions.

### Comments

These eighty-five patients were all operated upon at the New York Eye and Ear Infirmary.

The audiograms, in the early cases, were made by house officers, the rest, pre- and postoperative, were made by the technician at the hospital and are all on record at that institution.

There were no facial paralysis, meningitis, diffuse labyrinthitis, deaths, or intracranial complications in this series.

Excluding the six operations performed on the cases with serious nerve impairment in an effort to improve them and to further determine the merits of this procedure, there was only one instance in which the hearing was made definitely worse. This man had approximately 50 per cent loss of hearing with excellent bone conduction, a patent eustachian tube, and an intact ear drum. Each step of the technic was completed in a satisfactory manner at the time of the operation and an excellent fistula was established. There was no unusual postoperative labyrinthine reaction. Six months after operation the loss of hearing showed only a slight improvement. There was, at that time, an active labyrinth with very good bone conduction.

I am totally unable to explain the findings in this case. In view of the active labyrinth and good bone conduction, there should be a chance to improve the hearing. I expect to operate on the patient again at a later date.

The closure of the fistula by osteogenesis or fibrosis constitutes the paramount problem in this work and should be first on the research list.

The establishment of the fistula is necessarily the most important and difficult step of the operation. After doing a number of them, one naturally does a great deal of thinking and speculating in an effort to determine what may be done at the time the fistula is made that may improve the results and lessen the number of closures. The fistula is made with a small dental bur and a Zeiss lens which magnifies approximately two and one half times. As I think back over the fistulas I have made, it seems to me the most successful were the ones in which the bone was removed and the endosteum powdered and removed without disturbing the translucent outer wall of the membranous labyrinth. It should be remembered that part of this step is practically microscopic and cannot be accomplished with the same degree of exactness in every case. This is largely theoretic at this time, however, if the magnification could be enlarged and the serrations in the bur made finer so that the bone removal could be stopped at the same point in each case, the results might be definitely improved.

If the hearing is successfully maintained after several months, the results are apt to be permanent.

Why there will be bone regeneration and closure in some and a permanent fistula with lasting

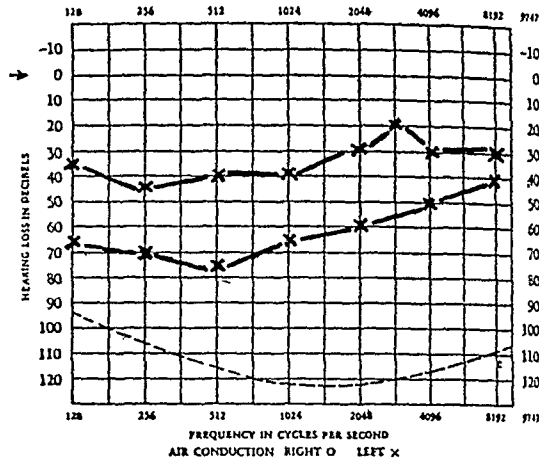
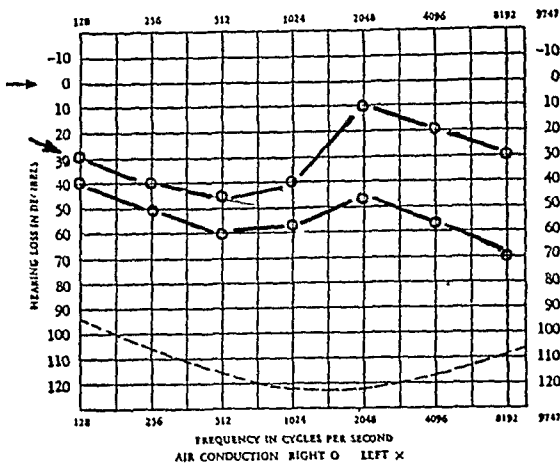


FIG. 1. Case 1. Lower line—hearing curve before operation, July, 1940. Upper line—hearing curve approximately four years after operation. Note that hearing has been maintained for almost four years.  
FIG. 2. Case 2. Lower line—hearing curve before operation, September, 1940. Upper line—hearing curve three years, eight months after operation.

results in others, when the technic is apparently the same, is still the chief problem.

I began this work in the summer of 1940 and have some cases that have successfully maintained their improved hearing almost four years. Lempert has some that have maintained their hearing improvement for more than six years.

In my experience, the ones that have successfully remained open after nine months or a year have consistently maintained the gain from that time to the present and there is every reason to believe that they will be permanent.

Lempert makes the very interesting observation that in all the histologic sections made of the

temporal bone, showing the presence of otosclerosis, none of them have ever shown an involvement of bone over the dome of the vestibule where the new fistula is made. This is an additional reason for assuming that results in the successful cases of several months' duration will be permanent.

I stated in my first report that this work is just beginning. This is still true.

The experience gained in the fifty-three additional operations reported in this article confirms several statements made in the first report. This is essentially an operation for conduction deafness; although good results are obtainable in

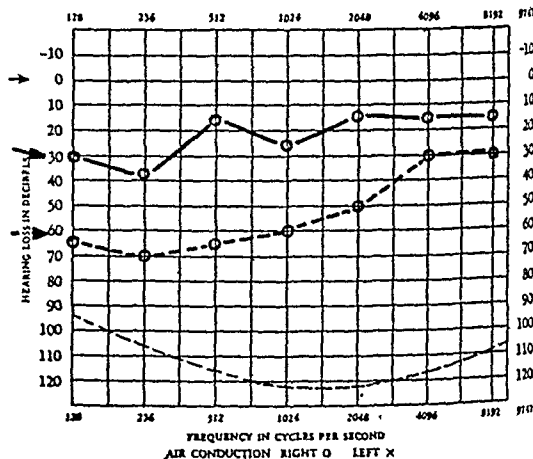
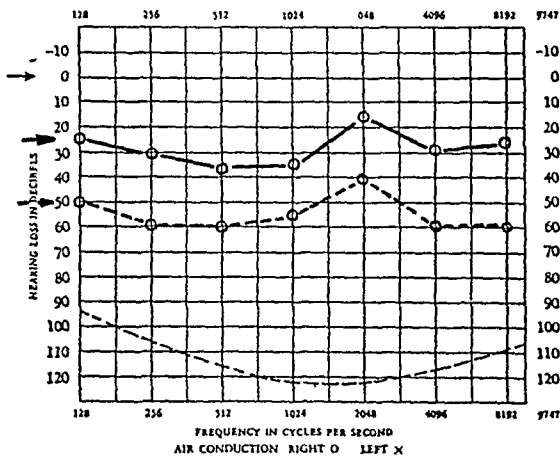


FIG. 3. Case 3. Lower line—hearing curve before original fenestration operation, March, 1941. Upper line—hearing curve three years, two months after operation. Note that improvement is of more than three years' duration.

FIG. 4. Case 4. Lower line—hearing curve before operation, January 28, 1942. Upper line—hearing curve two years, three months after operation. Note: Fistula visible to the naked eye.



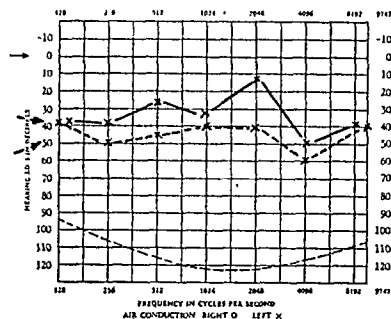
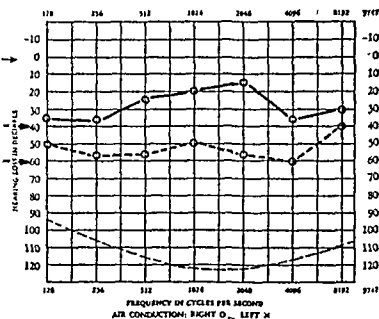


Fig. 5. Case 5. Lower line—hearing curve before operation, November 11, 1942. Upper line—hearing

Fig. 6. Case 6. Lower line—hearing curve before operation, November 11, 1943. Upper line—hearing



many cases, it is not possible to guarantee results in any individual case.

There is definite danger in the hands of the untrained technician. The operation must first be taught on the cadaver and the necessary effort devoted to the correlation of the intricate steps comprising the technic before it is attempted on the living.

It opens a vast field for otologic research. There is much to be learned about the proper testing of the hearing as a whole, the estimation of damage done in the individual frequencies, and the correct measurement of residual nerve function. We should, with more experience, be better able to classify the different types of deaf-

ness and to make a more accurate prognosis before operation.

Cataract operations have been restoring sight for a long time. The fact that they are not all successful does not mean that the operation should be discarded and has not prevented it from restoring useful vision to many thousands of persons. In my opinion, the fenestration operation for deafness is capable of rendering the same service to humanity in properly selected cases. Failure to secure successful results in some of them will not prevent the procedure from rehabilitating the lives of many persons both socially and economically by restoring practical and lasting hearing to them.

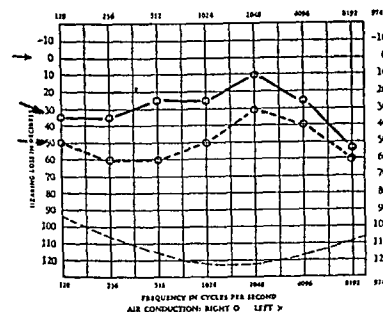
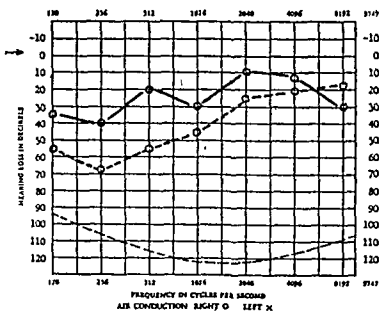


Fig. 7. Case 7. Lower line—hearing curve before operation, December, 1943. Upper line—hearing curve five months after operation. History of otitis media. Note: Thin secondary membrane in ear operated upon.

Fig. 8. Case 8. Lower line—hearing curve before operation, December 12, 1943. Upper line—hearing curve four months after operation. Mother and father of patient deaf mutes. Note: operation at 9 years of age.



It may be employed from childhood, as evidenced by a little girl 9 years old, presented at this meeting, to a well-advanced age. Fifty-eight was the oldest in this series. An older age is compatible with this operation, providing the physical condition is satisfactory.

If the operation is not successful and the fistula closes, with the proper indications and technic, in the vast majority of cases the hearing will merely recede to its preoperative level.

This technic involves the complex anatomy of the mastoid process and the middle and internal ear, and while there is necessarily a minimum danger in any major surgical operation, the eighty-five cases reported in this article demonstrate that it may be performed without undue risk to the patient.

One important fact learned by experience in the after-treatment is well worth recording. In the early stages of this work I had a great deal of trouble with secondary infections in the mastoid cavities after operation, some of them being extremely persistent and difficult to control. At Lempert's suggestion, a 2 per cent aqueous solution of gentian violet was used to coat the interior of the operative cavity after the first dressing on the fifth day. It was used on the flap and drum and raw surfaces. This contributed greatly to the control of the secondary infection; however, I suddenly began noticing some small perforations in the drum membrane which had never occurred before. The perforations healed after use of the dye was discontinued. This dye is extremely penetrating and should not be used on the drum and should be kept away from the edges of the flap in the early stages of the after-treatment until the attic and middle-ear spaces are thoroughly sealed by granulations.

I wish again to extend credit to Lempert for his cooperation and for the tremendous impetus he has given to this important research by completing the one-stage technic and improving the location of the fistula, as well as constantly striving to improve the technic and results.

The question of the hearing aid versus fenestration naturally arises. There are many people definitely opposed to the use of a hearing aid, while others do not mind and are unquestionably benefited by its use, especially for a certain period of time.

The fact that is of vital importance to a patient with clinical otosclerosis is that it is a progressive disease and many of them reach a point where the hearing aid is completely useless, while a successful fenestration not only makes it possible to discard the hearing aid completely but restores useful hearing and checks the progress of otosclerosis.

## Case Reports and Presentations

There are six postoperative patients with their hearing records, before and after operation, present at this meeting for examination. They represent a cross section of this work from the time I began it in July, 1940 to May, 1944. The longest, in period of time, is of nearly four years' duration, the shortest four months'.

*Case 1.*—The patient, who is now 28, had an original fenestration in July, 1940. His hearing improved and then receded. A secondary operation was performed in June, 1941. The fistula was covered with new bone; this was removed and the hearing was restored and the gain has been maintained for nearly four years since the first operation.

*Case 2.*—The patient is 35. He had an original fenestration in September, 1940. He has a very active fistula and has excellent results. It is now three years and eight months since the fenestration.

*Case 3.*—The patient is 45 and underwent original fenestration in March, 1941. He has good hearing for all practical purposes. It is now three years and two months after operation.

*Case 4.*—The patient is 18, and had a fenestra Nov-ovalis made in January, 1942. The patient's hearing was so bad when he was 16 that he considered stopping school and taking up lip reading. The postoperative improvement in the hearing is remarkable. It is now two years and three months after operation. The patient finished school and has a clerical position. Note the fact that the fistula is visible with the naked eye.

*Case 5.*—The patient, who is 35, had a Nov-ovalis fenestra made in November, 1942. Note the marked improvement in the 2048 frequency one year and six months after operation. This results in excellent hearing for ordinary conversation.

*Case 6.*—A Nov-ovalis fenestra was made in July, 1943. There is a fine practical gain more than ten months after operation.

*Case 7.*—The patient is 33 and has a history of a double middle-ear infection at the age of 5. Examination showed a bullous thin secondary membrane covering a large perforation of the drum in the left ear, with the audiogram showing a 40-decibel loss in the 512 and 1024 frequencies and a 15-decibel loss in the 2048 frequency. The right ear showed a good-sized perforation of the drum occupying the lower and posterior quadrant, covered by a fairly thin secondary membrane. The audiogram showed a 60-decibel loss in the 512 frequency, 50 in the 1024 frequency, and a 30 decibel loss in the 2048 frequencies. I debated about operating because of the history of previous infection and the thin secondary membrane covering this perforation; I consented to operate after fully explaining the possibilities of the thin membrane's failing to hold, and gaining the patient's full consent. A fenestration (Nov-ovalis) was performed in the right ear. Operation disclosed a sclerotic bone with practically no cells. The incus and malleus were surrounded by granulations with no apparent infection. The granulations made me regret operating, but after

removing them with the mucus and the head of the malleus an excellent fistula was established. The audiogram shows a gain of from 60 to 25 decibels in the 512 frequency, from 55 to 25 in the 1024 frequency, and from 30 to 10 in the 2048 frequencies.

This case history is reported in detail to show that a previous infection does not contraindicate the operation providing the infection has completely subsided and the drum is strong enough to permit the removal of the mucus and the head of the malleus and still remain intact.

*Case 8*—This patient is 9 years old. This little girl's mother and father are both deaf mutes. The father's deafness resulted from meningitis at the age of 6.

The mother was born a deaf mute. Upon examination, the child's hearing was found to show about 35 per cent loss in both ears, with good bone conduction, intact drums, and no history of previous aural infection. Unfortunately, with both parents totally deaf and with her own impairment of hearing she had had no schooling and could talk very little and used the sign language of the deaf mutes. The fact that the mother and father are deaf mutes is probably a coincidence. A fenestration was performed on the right ear on January 5, 1944. Her hearing shows a marked improvement and is normal for all practical purposes. She has been in school for two months making excellent progress. This is the youngest patient by five years upon whom I have performed this operation, and I believe the youngest on record anywhere at this time. While more time has to elapse before the results can be considered permanent, it shows that this early age does not contraindicate the operation and emphasizes the importance of re-establishing a pathway for sound to the internal ear before serious damage to the nerve has occurred.

## Conclusions

The fenestration operation is a thoroughly established surgical procedure capable of restoring practical and lasting hearing in selected cases.

The eighty-five operations reported in this article without any complications or deaths prove that it may be performed without undue risk to the patient.

There is a definite danger in the hands of the untrained technician. The operation must first be taught on the cadaver and the necessary time and effort must be devoted to the correlation of the intricate steps comprising its technique before it is attempted on the living.

The successful fenestration operation not only restores practical hearing but also checks the progress of the otosclerosis.

This work represents a fine type of research and merits in every way the full support of the otologic profession.

123 East 53rd Street  
New York City

## References

1. Smith J. Morrissey Arch. Otolaryngol. 37: 174 (Feb.) 1943.
2. Lempert J. Arch. Otolaryngol. 34: 880 (Nov.) 1941.

## Discussion

Dr. James A. Babbitt, Philadelphia—It is a signal honor to be invited to discuss this careful review of such a large number of fenestration operations by the endaural route.

These are essentially radical operations, performed with nicety of technique which we have long associated with Dr. Smith's mastoid surgery.

It is nearly forty years since the first radical mastoidectomy by the endaural route was performed by the elder Theis in 1907. The story of its evolution and modifications during these years has been a fascinating one, linked with the names of the most famous otologists in Europe. Now, illustrious names from our own country are being added.

Why is this fenestration procedure so important? Simply because it fills a serious gap in our therapeutic regimen. America is awakening to the importance of bringing up the efficiency of its youth. Nothing more striking has occurred than the great interest which has swept the country in the detection and prevention of impaired hearing and vision. The Academy of Ophthalmology and Otolaryngology is endeavoring to stimulate throughout America uniform procedures for survey and detection of otologic and ophthalmic clinics for necessary treatment. In school children much can be done, but in adults and the soldier returning with aural handicaps the problem is real, and, too often, the only recourse for advancing deafness is in the hearing aid and lip reading. Appropriate lenses for vision and adroitly fitted dentures are universally accepted, but the hearing aid still suggests the stigma of a trade-mark. The paper we have heard proves that fenestration is coming into its own. It is a far cry from the day, but a few years back, when, with a Philadelphia colleague, your speaker stood watching a fenestration operation performed most skillfully and successfully, but which consumed four hours of time under none too pleasant a local anesthesia, to the day last fall when a cheerful patient whose deafened ear Dr. Smith had corrected, and under a short general anesthesia, entered my office fairly radiating optimism.

Returning to a discussion of this paper, three things were most pleasing: (1) the skillful way in which the writer quieted the wrangle of many decades over the actual pathology of otosclerosis by the neat substitution of the term "clinical otosclerosis," (2) his courageous decision that in clinical otosclerosis, even with advancing loss of nerve function, there is a period of grace during which fenestration may still save the hearing, and (3) the fact that his operative time has been shortened and, as I inferred, general anesthesia is used instead of local. This has been a clear-cut, finely prepared paper, and after hearing it we believe the fenestration window will not close. We accept the author's dictum that this work can be done only by a trained and skillful operator.

# FLUORESCENCE WITH THE WOOD FILTER AS AN AID IN DERMATOLOGIC DIAGNOSIS

## Observation on Patients at Bellevue Hospital

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THE Wood light was invented in 1903 by the American physicist, Robert William Wood. It is a light which has been passed through a filter that absorbs visible rays but allows a portion of the ultraviolet rays to be transmitted. It has fluorescent-exciting properties.—It has been employed in industry to determine the difference in various metals, chemical ingredients, and textiles;<sup>1</sup> in banking houses and similar institutions to detect counterfeit currency; in medicolegal problems;<sup>2</sup> and, more recently, in ophthalmology,<sup>3,4</sup> pathology,<sup>5</sup> mycology,<sup>6</sup> and in dermatologic diagnosis.

It is the aim of this paper to show that the Wood light, although not producing the characteristic distinctive color changes which are observed in some fungous infections of the scalp, is an aid in the diagnosis of nonmycotic dermatoses.

Fine shades of color are not appreciated by many people. The primary colors are recognized by most of us, but a lack of development of the color sense limits the scope of appreciation of many. In order to cope with the various secondary colors seen under the Wood light, we have used as our guide the standard colors as exhibited in Merriam-Webster's *New International Dictionary*.<sup>7</sup>

The color of an object depends on its reaction to rays of light. This accounts for the difference in appearance of certain colors in the daylight as compared with artificial light and the Wood light.

### Types of Wood Lights

The source of radiations in the production of fluorescence is a high-pressure quartz-mercury arc burner sealed within a reflector-type glass bulb. A metal coating of the inner wall of the glass envelope provides strong reflection of the generated radiations. The bulb is operated on a flexible upright from an ordinary alternating current power supply, through a compact transformer. The light used by us was one from the Hanovia Chemical Manufacturing Company of Newark, New Jersey, Serial SC 993—Type 16103 (see Fig. 1). Technical data: power

supply—110–120, 60 cycles, A.C.; wattage—100 + wattage in bulb; operating voltage in bulb—approximately 130 volts; operating amperage—approximately 0.9 ampere.

The bulb has a maximum diameter of five inches, with an over-all length of eight inches. It takes three minutes to reach maximum intensity.

A wide variety of organic and inorganic substances absorb ultraviolet rays of certain wave lengths and convert them into longer wave lengths. This conversion of energy is called fluorescence. Colors and shades of the re-emitted light vary, depending on the chemical composition and purity of a material, many having their own characteristic glow.

For good observation of fluorescent effects it is necessary to eliminate visible light rays, because these tend to diminish fluorescence. A special dark glass filter consisting of sodium-barium silicate plus 9 per cent nickel oxide is mounted on the front of the bulb. This filter is practically opaque to the visible light generated in the bulb, but transmits the bands around 3,660 angstrom units (the most effective wave lengths to cause fluorescence). Goodman worked with a Corning glass special filter, G.986A, which permitted the passage of ultraviolet to 2,400 angstrom units.<sup>8</sup>

Office ultraviolet lamps may be used with a Corning glass violet ultra, No. 586, of a thickness of 4–5 mm. interposed between the ultraviolet source and the object to be examined. It is suspended by and incorporated in a black rubberized focusing cloth to exclude the visible ultraviolet rays. This is a cumbersome, time-consuming method.

A 200-watt Corning glass electric bulb may be used in an ordinary floor lamp for fluorescence. Fungous-infected hairs may be detected with this light, but it is not practical for other examinations. It emits a reddish glow, radiates a great deal of heat, and excites weak fluorescence.

For the best results, examination of patients or materials should be carried out in a dark room. Examination is occasionally enhanced if the examiner wears smoked glasses.

### Effect of Wood Light on Normal Person

The hair appears dull and lusterless, devoid of its sheen. White hair fluoresces brilliantly;

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From the Department of Dermatology and Syphilology, New York University College of Medicine, and the Department of Dermatology and Syphilology, Third Medical (New York University) Division, Bellevue Hospital, service of Dr. Frank C. Combes.

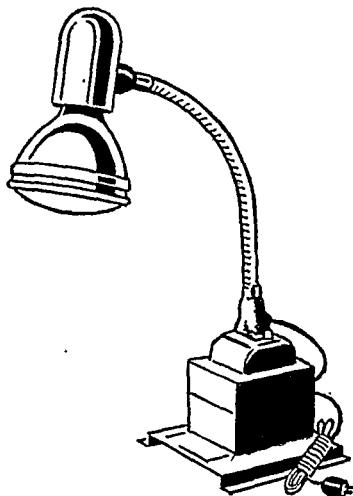


FIG 1. Inspectolite (Wood light).

the extent of grayness can be readily determined. Blond hair appears to be made up of several shades and an occasional red strand is observed. Single gray hairs are frequently observed in children. The face has a ghastly hue and is often covered with many lentigines not visible to the naked eye and not hidden by cosmetics. In the middle vertical third of the face in patients with a somewhat oily skin are seen numerous closely aggregated, pin-point, pinkish elevations emerging from the follicular orifices. This condition is seen on the nose, on the contiguous portions of the cheeks, surrounding the tip of the chin, on the inner half of the malar prominences, and in the glabella region. An analysis of this material indicates that the pinkish color is due to porphyrin,<sup>9</sup> and possibly is the substance which sensitizes the skin to light, because it is found in areas where the skin is affected by photosensitizing diseases such as lupus erythematosus.

The eyelids are violaceous in color, which is barely visible under ordinary light. The pupil of the eye is aquamarine in the white race and yellowish-green in the Negro. The color is due to the density and fluorescence of the crystalline lens. The sclera is of a slate-colored bluish hue. The conjunctival blood vessels are better delineated. In some Negroes and to a lesser extent in members of the white race, irregularly rectangular, glistening, cream-colored bodies are ob-

served on either side of the cornea. These are probably due to the deposition of fat; this observation offers an explanation for the development of pingueculae and pterygii. The periphery of the cornea is grayish-white and not sharply outlined in the white race; it forms a hyperpigmented border in the Negro.

The lemon-yellow color of the external auditory canals is caused by the dried powdery cerumen lining them.

The lips are purplish blue.

The mucous membranes of the mouth can be better studied, because several shades of red can be seen. There is less blending of color of the various anatomic areas than is seen with the naked eye. The median raphe of the hard palate appears as a slightly elevated grayish-white line. The soft palate is of more dusky red hue than the hard palate, and the line of demarcation between the hard and soft palate is better marginated. There is a halo of even duskier redness surrounding the anterior pillars of the fauces, indicating greater concentration of blood vessels. The normal teeth are pearly white; false teeth are black, blue-black, or corn yellow, and seldom white. Tartar is cinnabar red in color; this is especially evident in carious teeth and in those exposed areas of the teeth where there is retraction of the gums.

The hairs of the axillae are whitish in color, because of saturation with sweat, which is the color of milk. The follicular plugs at the elbows are fluorescent because of the keratin content of the plugs.

The external genitals in both the male and female are dusky purplish-blue, which is strongly contrasted with the less vascular surrounding skin.

There is an increase in color due to the superficial blood vessels in the skin just proximal to the finger- and toenails. Fingernails are pearly white and highly fluorescent, as are the palms and the weight-bearing areas of the soles. Keratin structures give this pearl-white fluorescence. The nonweight-bearing surface of the foot is light blue in color.

The region anterior to circumvallate papillae is a highly fluorescent pinkish lozenge-shaped area of varying size. This is observed in men and women and especially in children. The absence of this triangular-shaped pinkish area is suggestive of a dysvitaminosis.

### Fungous Infections

Lewis has demonstrated that the Wood light is an important, easily applied aid in the diagnosis of tinea capitis, tinea barbae, and tinea corporis. Under this light the infected hairs and diseased patches of the scalp, when caused by the

*Microsporon lanosum* or *Microsporon audouini*, fluoresce brilliantly. The individual infected hairs take on a bright, luminous, pale-green color. In addition to the important diagnostic value of this examination, it provides a means of determining the extent of the scalp infection, it is a check on the progress of the disease or the treatment, and it is one of the best practical means of deciding when cure has been accomplished. It is of great importance in detecting those cases of *tinea capitis* in which there is little or no clinical evidence of disease, although the infection may be extensive. It is an accurate, rapid method for the examination of the scalp of large numbers of school children during an epidemic of ringworm. Infected pet animals, such as the kitten, suspected of being the source of fungous infection, may be examined by this method.

The Wood light may also be used in examining suspected or infected headgear and clothes during and after fungous infection of the scalp, as well as contaminated instruments in barber shops, upholstered furniture in the home, and the backs of seats in the children's sections of moving picture theaters.

It has also been used to advantage in studying the color changes of fungous cultures.

*Pediculosis capitis* and *pediculosis pubis* can be detected much more readily by means of the Wood light. It was discovered accidentally in several patients when its presence was not suspected clinically. Although the nits do not fluoresce brilliantly, they are more distinctly visible. This is probably due to the fact that they are thrown into relief by the dull background of hair.

The lesions of *pityriasis versicolor* fluoresce a dull yellow. The extent of the eruption is easily determined.

Chronic paronychia, especially of the monilial type, is more distinctly seen. It appears as a well-circumscribed, dark, grayish-blue area covered with a fine fluorescent scale.

### Syphilis of the Skin and Mucous Membranes

As pointed out by others and as demonstrated by us on numerous occasions, fading secondary syphilitic eruptions and evolving syphilitic maculopapular eruptions which have not appeared clinically are visible under the Wood light. The importance of this aid is obvious in the dark-field-negative primary stage of syphilis when the report of the Wassermann reaction of the blood has not yet been received and after the clinical disappearance of the secondary syphilitic eruption. Clinically healed moist papules and mucous patches can still be seen as dusky pink-

ish-red lesions with an opalescent sheen. Examination of the oral mucous membranes during the eruptive secondary stage of syphilis revealed, as a rule, more mucous patches than we were accustomed to see clinically. They can be seen on the tongue, fauces, and especially on the posterior pharyngeal wall. They are so numerous in the latter location as to account for the syphilitic angina. Syphilitic papules appear as dusky blue with a grayish tone, surrounded by a halo of apparent devascularization or paleness. Macules are more prominent than papules. Papules can be seen overlying the bifurcation of venules on the nonweight-bearing areas of the feet. Chancres appear larger because of the narrow zone of salmon-colored redness, which is not visible clinically. There is a shiny slate-colored sheen to the erosive area of the chancre. Moist papules on the genitals are dull pink in color.

### Chronic Dermatoses

The lesions of many chronic dermatoses undergoing evolution or involution are distinctly visible, although many of the lesions may not be seen with the naked eye. This is true of lupus erythematosus of the fixed type. In several patients with this disease healed lesions not visible to the naked eye could be seen months later with the Wood light. In a patient with acute lupus erythematosus the lesions which had completely disappeared during a remission of the disease could still be seen clearly as powder-blue discolorations on the previously involved sites.

Similar experiences occurred in numerous dermatoses, including acne, psoriasis, herpes zoster, lupus vulgaris, neurodermatitis, seborrhoeic eczema, acute lymphosarcomatosis, etc. In a young woman with seborrhoeic eczema the former lesions, though not discernible to the naked eye, could be seen several weeks after they had disappeared, with superficial roentgen rays. This observation offers the reason for recurrence of the lesions of many chronic dermatoses *in situ*. Pruritus not accompanied by clinically apparent lesions may display the lesions when examined with the Wood light. Satellite advanced lesions not visible to the naked eye can be seen in lupus vulgaris. Evolving lesions of erythema induratum and the scars left by these lesions are distinctly visible as dark-blue areas.

*Verruca vulgaris* fluoresces a silvery white under the Wood light and may be differentiated from *molluscum contagiosum* by the fact that the latter is not fluorescent except for the speck of keratin surmounting the lesion. The follicular plugging of the fixed type of lupus erythematosus, folliculitis decalvans, lichen planopilaris, and lichen spinulosus associated with vitamin A

deficiency are readily observed is highly fluorescent small white conical elevations.

Variouse eczemas reveal a reddish-purple fluorescence several inches beyond the area of clinical involvement on areas that appear quite normal to the naked eye. Ichthyosis of severe type involving the torso as well as the extremities shows highly fluorescent white silvery quadrilateral scaling of unique appearance. Untreated psoriasis may be differentiated from seborrheic eczema by the bright silvery fluorescence of the scales, which is not present in the latter condition.

### Abnormal Conditions of the Oral Cavity and Mucous Membranes

Lesions of the tongue such as syphilitic glossitis and dysvitaminoses are seen in better contrast. Diagnoses of these conditions have been made on several occasions with the aid of the Wood light which would have been missed on ordinary clinical examination. The bald areas are darker red in color with a brownish fringe, and sharply margined on the dorsum tip, and sides of the tongue.

The same is true of lingua plicata and lingua migrans. They are distinctly visible and often occur together.

Subclinical jaundice is often detectable on the oral mucous membranes and, when jaundice is present in this location, the sclerae are similarly affected.

Lichen planus lesions of the oral mucous membranes do not fluoresce but keratinized areas of leukoplakia fluoresce brilliantly. This finding is an aid in diagnosis.

It has been stated that the disappearance of the orange red, elevated coalescing coating on the tongue is an indication of vitamin B deficiency. The coating is abundant in children, less so in well nourished adults and is absent in those suffering from vitamin deficiency. The fissured perleche-like lesions at the angles of the mouth are dusky red, the erythema extending beyond the area of obvious clinical involvement.

It is not unusual to observe dentifrice and mouth washes on the lips and around the mouth indicating the possibilities of dermatitis venenata of these locations.

### Eyes

The scars of interstitial keratitis are easily seen. Their extent, depth, character, and progress can be observed and the shadows of these scars can be seen reflected on the crystalline lens. Subclinical jaundice, as evidenced by decided xeroderma tint of the conjunctivae and oral mucous membranes, can be ascertained. This was observed in several patients who were under in-

tensive treatment with mapharsen. An elevation of the icteric index confirmed this finding. Argynia, with involvement of the conjunctivae and the mucous membranes following overdosage with silver arspenamine in the treatment of syphilis, causes a dark-slate color in the scleral and deep blue in the oral mucous membranes. The formation of vascular loops and Bietot spots in riboflavin deficiency and the keratoconjunctivitis of rosacea are more readily observed and studied. Punctate purpuric lesions are occasionally seen on the palpebral conjunctivae following severe coughing or vomiting when similar lesions are not seen on the skin.

### Epithelioma, Senile and Seborrheic Keratosis

The extent of involvement of the skin in epithelioma can be more accurately determined under the Wood light. This is of importance in treatment by surgery or roentgen rays in order that the entire diseased area may be excised or treated.

Occasionally satellite lesions of malignant melanoma can be seen. Transillumination is a more effective method of inspection when the lesions are located on areas which lend themselves to this form of examination.

Precancerous lesions on the exposed parts of the body, such as senile and seborrheic keratoses, fluoresce brightly by virtue of the fact that they are usually surmounted by dry, adherent keratin material.

### Cicatrices and Keloids

Operative scars are seen distinctly with the Wood light. They are deep purplish-blue to lilac-colored, depending upon their age, width, and depth. In the person with several incisional scars one can roughly determine the relative age of each cicatrix by the density of the color. Sites of previously burned areas of the skin not visible or barely visible to the unaided eye are sharply delineated as shadow-like, dark, bluish-black areas. These smudge-like areas are often visible despite efforts to cover them with cosmetic make-up preparations. The former sites of keloids which have long since disappeared under radiation therapy are visible as dark patches.

What has been said about the aforementioned cicatrices is also true of scars following ecthyma, acne, papulonecrotic tuberculide, lupus erythematosus, lupus vulgaris, epithelioma, alopecia cicatrizzata, tertiary syphilis, neurotic excoriations, and so forth. The punched-out, old scars of papulonecrotic tuberculide appear luscious, this color deepens to dark violet in recent scars. This observation may be applied in crime detection in revealing the scars, invisible in ordinary

light, which have followed plastic surgery operations to change the identity of a criminal.

Recent trauma to the skin following injections into the buttocks over a period of a week were observed as distinct pinhead-sized reddish-blue spots. The total number of injections given could be accurately determined by the number of puncture marks present in a patient who had been treated every three hours eight times a day with penicillin for syphilis.

### Vitiligo and Nevi

There is bright white fluorescence in vitiliginous patches. They are much better visualized under the Wood light because the surrounding skin is darker, especially the hyperpigmented margin. Small patches of vitiligo not observed in normal light can be easily detected. Patients were told of rectangular patches of vitiligo on the cheeks which they never suspected had been present, until they recalled that these areas were sunburned disproportionately to the rest of the face and that they had difficulty in making cosmetics in these areas blend with the surrounding skin.

Freckles are accentuated and people have many more times the number of lentigines than can be seen with the naked eye.

Nevus anemicus can be differentiated from vitiligo more readily because vitiliginous areas partially lose their fluorescence when rubbed, but in nevus anemicus the lesion itself blanches more in contrast to the surrounding area of erythema.

Common moles are a little darker, with a reddish tone. The blue nevus and the black mole are jet black under the Wood light. The chloasma of pregnancy is quite marked, even when not conspicuous in ordinary light.

The port-wine mark, hemangioma, and senile angioma are dark blue with a reddish tone. Some small port-wine marks on the fingers not visible clinically can be distinctly seen as dark-red well-circumscribed lesions which blanch on pressure.

### Exanthemata

We have used the Wood light in studying the acute infectious diseases, such as measles, chicken pox, and scarlet fever. In measles the eruption may be seen before and after its clinical appearance, but the Koplik's spots are better seen in daylight or ordinary artificial light. The strawberry tongue of scarlet fever is much better appreciated under the Wood light. It is covered by a heavy pinkish-red coating with dark-bluish punctae. The desquamation in scarlet fever is observed earlier, especially when there is separation of the upper layers of the epidermis at the

ends of the fingers. These areas fluoresce and the margins of the loose skin appear quite white.

The mucous membrane lesions of varicella stand out in sharper contrast on the hard and soft palate than they do under natural light, but the Wood light is of no additional aid in examining the cutaneous lesions.

### Stains on the Skin

A number of patients have been observed under the Wood light who showed golden-brown band-like discoloration of the forehead and wrists caused by hat-band and wrist-watch band dyes.

Fluorescent stains of various colors are seen frequently on the body which are caused by substances applied to the skin. Perspiration creams, when applied to the arm pits, give a lemon-tinted fluorescence. Recently applied lotions, salves, and powder fluoresce. Oftentimes traces of these materials may remain even after thorough bathing with soap and water. Dermatitis venenata may be caused in this manner.

A patient who complained of pruritus ani showed a yellow fluorescence in the perianal, buttock, and thigh regions under the Wood light. On questioning, she stated that she had used derma-medicone for the relief of pruritus. This fluorescence persisted in spite of thorough bathing.

Petrolatum (vaseline), when used alone or as a vehicle, is highly fluorescent and must be removed before an eruption can be studied under the Wood light. Salicylic acid is fluorescent under certain Wood lights but not with others. The fluorescence of salicylic acid can be masked by interposing a piece of ordinary glass between the filter and the salicylic acid crystals.

### Roentgen Ray Effects

Roentgen ray hyperpigmentation after a single dose of 75 r of roentgen rays, although not visible to the naked eye, can be seen distinctly. An epilating dose of roentgen rays shows a subclinical erythema appreciated only under the Wood light. More information can be gleaned from this form of inspection of radiodermatitis. The telangiectases are more distinct; interspersed areas of hyperpigmentation, atrophic areas of depigmentation, and fluorescent precancerous keratoses are better visualized. The area of involvement extends beyond that which is visible to the naked eye.

### Skin Tests

The reaction of erythema in the skin following skin testing with tuberculin, trichophyton, oidy-mycin, etc., may be seen for a considerable period of time after every vestige of erythema has disappeared clinically. An area of light blue



color, oval in shape and measuring 6 by  $3\frac{1}{2}$  inches, could be detected under the Wood light a month after an intradermal test with oidiomycin had been performed, even though no trace could be seen clinically. Delayed subclinical reactions with patch tests were also observed.

### Summary and Conclusions

1. Several types of Wood filters with varying degrees of fluorescence are described. The Wood filter employed by us transmitted the bands around 3,660 angstrom units. Fluorescent effects observed with one Wood light may not be seen with another of different angstrom unit transmission.
2. The appearance of the skin and mucous membranes of the normal person under the Wood light is described.
3. The most important application of the Wood light in dermatologic diagnosis is in detection of fungous infection of the scalp. It is particularly valuable in the rapid examination of the scalp of large numbers of school children. Fluorescent fungous-infected patches and hairs can be visualized with the Wood light, often when there is no clinical evidence of tinea capitis.
4. Evolving and fading syphilitic maculopapular eruptions are visible under the Wood light.
5. The true extent of the eruption of many chronic dermatoses may be better discerned.
6. Cutaneous and mucous membrane lesions which do not show definite color contrast with their background, as a rule, can be more distinctly seen under the Wood light.
7. The Wood light is of considerable aid in detecting the materials which commonly cause dermatitis venenata. This observation may be applied in the study of industrial dermatoses.
8. The Wood light is an aid in dermatologic diagnosis.

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### Discussion

Dr. Herman Goodman. The rare accomplishment of the systematic observation of production of the new method of utilization in the ultraviolet light utilized, is dependent on the source of monochromatic light. The clinical study is evidence of the difference between fluorescence and reflection of ultraviolet light. The exciting radiation is repeated each time it is repeated. Two observations of color of fluorescence at recording the skin have failed energy involved.

The offices of practitioners are the ultraviolet source of nickel glass, or emitting passageway easily fitted.

In a dark of vibrations of visual sensation of tissue of the dermatologic Nothing The gorgeous because of pearly yellow of one and the same source of bluish neck to the most severe types of flatly reiterated in current under types, referred to by "cervix", the presence or may be determined by the of tincture of iodine, which of squamous epithelium but of area covered by columnar is present, the identification of organism by means of hanging drop in saline should elimination. Syphilis and other factors of cervicitis are not be forgotten in all advanced cervicitis may simulate they fall of grooves and

infection is longer cervicitis. It among unmarried are well known. its cardinal mani- described, but they of one and the same topic and microscopic to the most severe types of flatly reiterated in current under types, referred to by "cervix", the presence or may be determined by the of tincture of iodine, which of squamous epithelium but of area covered by columnar is present, the identification of organism by means of hanging drop in saline should elimination. Syphilis and other factors of cervicitis are not be forgotten in all

advanced cervicitis may simulate they fall of grooves and

tants, dyes, etc., or industrial dermatosis, is uncovered. The evidence produced under fluorescence is valuable in detecting the cause of otherwise unrecognized reactions to insult of the skin, such as the application of hair dye, eye wash, skin cosmetic, fur dye, etc. Details of results of examinations have been published, as noted in the list of references attached to the paper of Costello and Luttenberger.

The most exciting experience in the study of the skin with fluorescence under filters permitting passage of radiation less than 3,000 angstrom units is the vivid appearance of salicylic acid. The interposition of a piece of ordinary glass casts a shadow obliterating the specific fluorescence of the salicylic acid. The experience recited by Drs. Costello and Luttenberger with the prototype of the Wood filter, effective filtered radiation of about 3,660 angstrom units, augments rather than duplicates the published observations made with Corning glass G-986-A filter and mercury vapor arc in quartz source of ultraviolet.

The need for secret signalling by our armed forces has intensified investigation of sources of black light and fluorescent and phosphorescent materials. Ships are kept in line and at proper distances from each other under certain conditions of night maneuvers through invisible ultraviolet sources of radiation

impinging upon reacting lenses of the observer. In a recent address, E. W. Boggs, of the Westinghouse Electric Manufacturing Company, Bloomfield, N.J., revealed details of activating light sources for luminescent materials. A special glass bulb impregnated with coloring material, enclosing a 250-watt incandescent photoflood lamp, permits spectral radiation in the near ultraviolet zone, 3,000-4,600 angstrom units. This lamp operates at exceedingly high temperature. Activated intermittently by electric current, the average approximate anticipated useful life of this bulb is fifty hours. A recent but limited experience with a commercially available incandescent bulb designated by the Westinghouse Company as purple X-250-watt A-21 in red-purple finish indicates it is a valuable addition to the diagnostic armamentarium in dermatology of the physician. The bulb does not replace the mercury vapor arc in a quartz source of radiation with an effective filter Corning G-986-A. The incandescent red-purple photoflood lamp and the mercury vapor arc with filters equivalent to the Wood nickel filter do not fluoresce the salicylic acid group of drugs. It will be interesting to have systematic studies made with the recently released red-purple photobulb A-21 incandescent source of filter combination.

#### CHINA'S JUNIOR MEDICAL AIDES

Eight thousand young Chinese men and women—many of them only 17 years of age and none over 25—are carrying the burden of medical treatment of wounded Chinese soldiers. The young medicos are known as junior medical aides, and go into the field after intensive training of six and even three months.

These facts were told by Lt. Gen. Robert Khosheng Lim, chief of the Supervising and Planning Commission of the Chinese Army Medical Service, who has just arrived in this country on a military mission.

China's critical shortage of trained medical personnel, described by General Lim as "the Chinese Army's most serious medical problem," is responsible for the emergency training of the young medical aides. In Free China today there are only about 6,000 fully trained M.D.'s, he said. Only 3,000 of these are serving with the Chinese Army.

The training of China's young army of medical aides is accomplished in six Emergency Medical Service Training Schools, which were organized partly with funds supplied by the American Bureau for Medical Aid to China, and which are today being supported by funds obtained by United China Relief through the National War Fund.

Only the most basic medical training and instruction in only the most common diseases can be given to the junior medical aides, since the need for their services is so great, Dr. Lim said. But the efficacy of their training and the young people's efficiency in putting into practice their limited medical knowledge is shown partly in the fact that there has been no major epidemic in the Chinese Army or in China for six years.

"Further proof of the worth of the Emergency

Medical Service Training Schools," said General Lim, "is the fact that fatalities among Chinese wounded, which were as high as 50 per cent in 1937 and 1938, are now only about 5 per cent."

The training given to the medical aides consists of instruction in first aid, in setting bones and treating fractures, in immunization, in preventive medicine, and in general sanitation.

The Emergency Medical Service Training Schools graduates go into small towns or villages near the front lines and set up medical stations and dispensaries.

"Civilians and soldiers alike are given medical treatment," said General Lim, "because in areas where the Chinese soldiers depend for food and other necessities upon the local population, and especially when they remain over long periods in one area, the good health of the civilians is essential. Many backward villages which never before had medical service of any kind are now receiving it."

Shortage of equipment must often be handled with new methods, such as those used in vaccinations. In normal medical practice, an individual ampule of vaccine is used for each person. But because it is impossible to obtain materials for large quantities of ampules, the Chinese Army Medical Service is using large ampules containing sufficient vaccine for 100 vaccinations, and is administering to groups of 100 at a time.

General Lim organized the Chinese Red Cross Medical Relief Corps in 1937, and created hundreds of mobile operating units, known as "hospitals on muleback," which for seven years have operated as near as a half mile to the fighting lines. Last June General Lim was awarded the Legion of Merit by President Roosevelt—*Connecticut State M. J.*

# AN EVALUATION OF THE VARIOUS METHODS OF TREATMENT OF CHRONIC CERVICITIS

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SINCE Stroganoff<sup>1</sup> in 1893 and Winter<sup>2</sup> in 1896 first called attention to cervicitis as a distinct clinical entity, a vast literature on this subject has accumulated. The causes, effects, and complicating factors have been thoroughly discussed and many methods have been advocated and practiced for its prophylaxis, relief, and cure. Nevertheless, the relative frequency of this condition has shown little apparent decrease in the last decade. Its widespread prevalence has created an appreciation of the seriousness of cervicitis and has stimulated a greater effort to render more appropriate and satisfactory treatment. It is difficult to say whether this high incidence is due to the failure of curative measures or whether a more thorough examination of patients<sup>3</sup> has detected a greater number of cases.

The cervix has long been recognized as a potential source of infection and as an important factor in pathology. Laboratory investigation of the pathologic reaction of the cervix to infection, supplemented by more intense clinical study, confirmed the fact that cervicitis is not a surface infection but involves the entire structure, including the glands and lymphatics. Eradication of the infected tissue, together with its contained glands, is essential, not only as a therapeutic measure but also to preclude the possible subsequent development of cervical carcinoma.

Its anatomic location and physiologic function render the cervix especially susceptible to trauma and infection. An understanding of the anatomic distribution of the lymph channels and nodes which drain the cervix and uterine body is necessary for the proper interpretation of cervical infection. This has been elaborately described by Sellers.<sup>4</sup> The lymphatic inter-relationship of the cervix and urinary bladder has been emphasized. Herrold<sup>5</sup> *et al* state that disturbance of the lower urinary tract has been completely relieved by coagulation of the chronically infected cervix. Winsbury-White<sup>6</sup> in 1933, in experiments on animals, showed the spread and ascent of infection from the cervix to the ureter and kidney.

The intimate relationship of the cervix to contiguous structures has been likewise cited as a

cause of infection and reinfection of the pelvic organs, vagina, and urinary tract. Graffagnino<sup>7</sup> contends that the infected cervix is a causative factor in systemic infection, ranking in occurrence and consequence next only to the teeth and tonsils. Kostmayer<sup>8</sup> cites specific instances of arthritic and other types of invasion which were cured by local treatment of the infected cervix. Davis<sup>14</sup> states that in his experience, when streptococci can be grown from the cervix of a patient with arthritis, cleaning up the cervical infection usually is followed by clinical improvement of the arthritis, and in a few cases in which other foci had been previously removed the degree of relief was beyond expectation.

Trauma from childbirth or instrumentation does not of itself result in cervicitis. The invasion of one or more pyogenic organisms such as the Streptococcus, Staphylococcus, colon bacillus, Pneumococcus, or similar bacteria is essential. If a laceration does not heal spontaneously in eight weeks it is evident that infection is present. Gonococcal infection is no longer considered the most frequent cause of cervicitis. It is not uncommon, however, in young unmarried women (Maloney<sup>9</sup> and Baker<sup>9</sup>).

The symptoms of cervicitis are well known. Leukorrhea is still regarded as its cardinal manifestation.

Many types of cervicitis are described, but they are essentially only parts of one and the same process. The macroscopic and microscopic changes from the simple to the most severe types are clearly and adequately reiterated in current literature. In the milder types, referred to by some as the "innocent" cervix, the presence or absence of erosions may be determined by the surface application of tincture of iodine, which stains the stratified squamous epithelium but does not affect the eroded area covered by columnar cells. If infection is present, the identification of the offending organism by means of smears, cultures, or hanging drop in saline should be part of every examination. Syphilis and tuberculosis as causative factors of cervicitis are rare, but they should not be forgotten in all suspected cases.

Some types of advanced cervicitis may simulate carcinoma. They fall into three groups: benign, precancerous, and malignant, and their differentiation is of the utmost importance. A biopsy should be taken if the changes in the cervix suggest the possibility of any of these con-

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ditions. Sections of the tissue should be taken from several areas of the cervix and subjected to a thorough microscopic examination by a competent pathologist. These specimens are best removed by a high-frequency cutting current to prevent the dissemination of cancer cells.

Both pathologists and gynecologists are convinced that some of the tissue changes of chronic cervicitis are undeniably precancerous (Bulard<sup>10</sup>).

Bailey<sup>11</sup> states that the ultimate sequel to erosion is malignancy, and Ewing<sup>12</sup> believes that cancer arises only on tissue which has become altered by chronic irritation. Wolfson<sup>13</sup> found that 3.95 per cent of all women who reach the age of 35 develop carcinoma of the cervix.

Davis<sup>14</sup> believes that there may be individual and sectional differences of opinion regarding various corrective forms of treatment, but most will agree that all cervical lesions should be kept under observation and treated by some method until satisfactory healing has been brought about.

Matthews<sup>15</sup> classification of various phases of cervicitis is of distinct aid to the clinician in the selection of treatment:

Group 1. The recently lacerated cervix of four to twelve weeks' duration, with a superficial infection; the nulliparous cervix, the seat of a mild gonorrheal or nonspecific infection.

Group 2. The lacerated, eroded cervix of three to twelve months' duration, with somewhat more extensive and deeper infection than that in Group 1, possibly with a few superficial cysts. This may be found in a moderately infected nulliparous cervix.

Group 3. The lacerated, everted, eroded cervix of two to five or more years' duration, moderately infected and with or without visible cysts. This is found in the moderately deeply infected nulliparous cervix with or without erosion and cyst formation.

Group 4. The old, lacerated, everted, eroded, hypertrophied, cystic cervix deeply and extensively infected and of long duration (from ten to forty or more years). The same condition is found in the extensively infected, cystic, hypertrophied nulliparous cervix.

The value of prophylactic care is mentioned by many to eradicate the early types of cervicitis and to prevent its progress. This may best be accomplished by meticulous asepsis and gentleness in all manipulations of the cervix, routine postpartum examination, and early treatment of all postpartal infections. Primary trachelorrhaphy, the immediate or intermediate repair of any cervical laceration over 15 cm. following childbirth, is now a recognized procedure, but it should be done only by the competent obstetrician who has been trained in the art of vaginal

plastic surgery (De Lee,<sup>16</sup> Goff,<sup>17</sup> Danforth,<sup>18</sup> Bloss<sup>19</sup>).

It is evident that the majority feel that the early eradication of the diseased glandular tissue, either by destruction or excision, is essential, and for this purpose topical applications are of little or no value. However, Klawns<sup>20</sup> advocates the vaginal and cervical application of insulin for cervicitis in both the diabetic and nondiabetic patient. Platz<sup>21</sup> has had good results with the Fissan silver powder. The intracervical application of solutions such as Filho's caustic has been extensively used by Marcel<sup>22</sup> in papillary and granular erosions, but he prefers coagulation. Guillemin<sup>23</sup> finds this solution superior to coagulation; few infections of the adnexa follow its use, but subsequent dilatation is necessary. Hamant and Rothan<sup>24</sup> find that atresia usually follows its application.

It is apparent from the recent publications that the removal of the diseased cervical tissue can be accomplished by simpler and less drastic measures than by major operative intervention. In the past years, there has been a growing tendency to utilize electrotherapeutic measures for this purpose, the most popular of which are cauterization, coagulation, and conization.

### Cauterization

The nasal tip and heavy-duty cautery destroy the diseased tissue by direct contact and the dissemination of heat. The amount of destruction depends on the size of the cautery tip and the duration of its application. Of the two, the nasal tip is the one more frequently used, for it requires no hospitalization or anesthesia. Superficial stripes, no more than one-eighth of an inch in depth, are placed on one or both lips, leaving islands of mucous membrane between. Danforth advises that one should not cauterize too high or too deep in the cervical canal, and that the stripes must not be placed too close to each other. If it is necessary to recauterize, a considerable length of time should elapse between treatments—months, not weeks. Costello<sup>25</sup> feels that this is the method of choice in the treatment of cervicitis during the childbearing period. It is used by Sichel<sup>26</sup> for extropions and erosions of the external os and by Gann<sup>27</sup> for simple papilloma and follicular erosions. Davis Dannreuther<sup>28</sup> and others utilize this modality for minor lacerations, erosions, and eversions, Soter<sup>29</sup> for superficial and recent lesions, and Roblee<sup>30</sup> for postpartum erosions and infections. Hunner,<sup>31</sup> Ground,<sup>32</sup> Ofut,<sup>33</sup> Ludden,<sup>34</sup> and others state that cauterization gives satisfactory results in the majority of cases. Maloney and Dallas<sup>35</sup> use it exclusively and report that infection never occurs, and that hemorrhage and stenosis are rare.

The dangers of the nasal tip cautery are emphasized by Hamant and Rothan Roblee states that it burns the superficial parts before penetrating the deeper tissues. Baker finds that stripping the cervical canal does not destroy the deep, infected cervical glands. Frost<sup>36</sup> notes carbonization of the tissues with resulting scar formation and that this procedure is not without danger because of latent hemorrhage. Secondary stenosis and painful menstruation have been observed by Stark.<sup>37</sup> Kimble<sup>38</sup> states that relapses or reinfections occur if all the glands are not destroyed and that cauterization either fails to cure or, if it does cure, produces atresia of the cervical canal. He condemns its use during the childbearing age and considers it obsolete. However, in reviewing the end results of 611 cases, Tompkins<sup>39</sup> concludes that cauterization gave the same percentage of cures and relief from leukorrhea as trachelorrhaphy, the Sturmdorf operation, or amputation of the cervix. In our opinion, the nasal tip cautery has a definite place in the treatment of minor lacerations and erosions.

As the term implies, the heavy-duty cautery is considerably larger than the nasal tip, and hospitalization and anesthesia are required for its use. The Post cautery so widely advocated a decade ago is not mentioned in current literature. Where the cervical canal is not sufficiently large to permit free manipulation of the terminal dilatation is essential. With this instrument the entire surface of the canal, as well as that of the erosions or ectropions, is thoroughly cauterized. Stearns<sup>40</sup> advocates deep intracervical cauterization if a superficial application does not cure a persistent and excessive discharge. It is recommended by Soter for extensive pathology or in very chronic or obstinate gonorrheal cases. Young finds it cures 50 to 60 per cent of cases of leukorrhea. Baker notes that atresia frequently follows the use of the heavy-duty cautery. Cannell and Douglass<sup>41</sup> point out that complications may follow cauterization with either the nasal tip or the heavy-duty cautery, and that the occurrence of subsequent widespread pelvic infections is evidently more frequent than is supposed.

### Coagulation

Another method for the destruction of the diseased endocervix is by electrocoagulation accomplished by the application of heat with a high frequency current through an active electrode placed in contact with the cervix or cervical canal. Arenas and Emanuel<sup>42</sup> found that the different effects obtained depended on the intensity of the current, duration of its passage and the form of electrodes that were used. Roblee states that the deeper tissues are affected before the

superficial. As a result of studies of coagulation of the uterus of rabbits, Moghano<sup>43</sup> concluded that the extent of healing depended on the size of the electrodes, the distance between them, the amount of current, and on the amount of water in the tissues. Very little scar formation follows its use, according to him.

Two types of high-frequency current are in use, bipolar (d'Arsonval) or unipolar (Oudin). Many use instruments of their own devising. (Unde,<sup>44</sup> Cherry,<sup>45</sup> Ground, Kimble, Remington,<sup>46</sup> Marcel, Soter, and others.) The application varies, some use an inactive plate on an external surface of the body, the active electrode in contact with the cervix or in the cervical canal. The Cherry instrument incorporates both poles in the one electrode. The amount of current used by different operators ranges from 200 to 2,200 milliamperes. There is also a difference of opinion as to the duration of treatment—a few seconds to fifteen minutes—and the site and method of application of the active electrode. The majority maintain that the active electrode should be held in one position during the treatment, but Kassebohm and Schreiber<sup>47</sup> and Kimble advocate rotating the instrument during procedure in order to preclude too great an amount of coagulation at one site. These extreme variations are due to the different types of high frequency apparatus used and the failure of manufacturers to standardize this type of equipment.

There are numerous references to the efficacy and results of coagulation. Many prefer this modality to the exclusion of others. Frost states that there are few cases of cervicitis or eroded cervixes which will not respond to coagulation if it is properly used. Kimble reports complete recovery in 80 per cent in a series of cases in six to eight weeks, following one application. Even in severe cases he obtained good results. The rapid and permanent cure without interference with subsequent pregnancy and delivery is reported by Arenas and Emanuel. Risacher<sup>48</sup> finds no contraindications for coagulation except tuberculosis. In 150 cases treated by this method, he had satisfactory results in 132, and in this series he had 24 cases of gonorrhea and 29 postpartum patients. Roblee goes so far as to say that coagulation will properly replace the Sturmdorf operation. Sichel, Barrett,<sup>49</sup> Ollervides,<sup>50</sup> Stark, Remington, Hamant, and Rothan are strong advocates of this procedure. Baker uses this modality before proceeding with trachelorrhaphy. Chosson and Casalta<sup>51</sup> found by biopsy that with coagulation the affected tissue was destroyed and replaced by normal tissue.

A few writers mention complicating factors following coagulation. Hiller feels that cauterization and coagulation are not entirely harmless

procedures and reports two deaths due to coagulation. Merletti<sup>52</sup> states that hemorrhages may ensue. As a causative factor in atresia of the cervix, coagulation is cited by Kassebohm and Schreiber. They suggest that in order to overcome the possibility of stenosis, a two-stage procedure be carried out with subsequent dilatation of the cervix with a uterine sound. In 1934 Ground believed that with coagulation the scar tissue was less in amount and density than with cauterization. However, in 1936, he concluded that with both of these procedures, the resulting cicatricial tissue and subsequent stenosis were equally frequent. The writer believes that coagulation has a definite place in the treatment of cervicitis in selected cases, in the hands of a skilled and careful operator.

The Oudin current, a monopolar high-frequency current, is used very little in this country. It destroys the diseased cervical tissue by fulguration or desiccation. The single electrode is applied directly to the tissue to be destroyed. Marcel and Ground found it applicable for surface erosions. Hamant and Rothan conclude that the results are unsatisfactory.

### Copper Ionization

Ionization with copper or zinc, one of the oldest electrical modalities, has recently been revived and is receiving increasing attention. Destruction of the diseased tissue is accomplished by introducing a copper or, rarely, a zinc, electrode attached to the positive pole of a galvanic current; the inactive electrode is attached to the negative pole. Several applications are required. Guillemin finds it effective for some types of cervicitis or erosions, principally the milder forms. Forman<sup>53</sup> believes that it approximates the ideal treatment. Tovey<sup>54</sup> has found it more satisfactory than coagulation. Ground, at present, is of the opinion that copper ionization is indicated in many cases with prevailing local symptoms such as leukorrhea, bleeding, or backache, and concludes that the amount of scar tissue is not so great as with other electrosurgical modalities.

### Conization

Conization (Hyams<sup>55</sup>) was devised to remove the diseased endocervix by means of a special instrument with a fine high-frequency cutting current which produces a minimum of coagulation. The instrument is constructed to conform to the spindle shape of the cervical canal and the cutting element removes one-eighth of an inch of endocervical lining (the thickness of the cervical gland bearing tissue) with each revolution. Crossen<sup>56</sup> has modified the shape of the wire tips so that a larger amount of tissue may be removed by

the terminal portion of the loop. By a microscopic study of the tissue excised by conization, Mason has shown that the cut surface shows a minimum of coagulation and that the specimen is unimpaired and satisfactory for microscopic study.

Graffagnino describes this method as simple and satisfactory, and advises its use in practically all forms of chronic cervicitis. In his report of 400 cases, 95 per cent showed relief of symptoms, anatomic restoration, and preservation of function. Mason<sup>57</sup> stresses its simplicity and economic value and claims that little or no bleeding occurs and that subsequent stenosis is nil. He states that it results in as high a percentage of cures as the Sturmdorf operation, which he believes is the best of the surgical procedures. Adair<sup>58</sup> states that conization has its place. Tracey,<sup>59</sup> Davis, Barrett, and others find it satisfactory in selected cases. Reuth<sup>60</sup> has used it since 1928 with good results. He eradicates the diseased cervical tissue by conization and treats a complicating pelvic cellulitis by medical diathermy. Its value has also been emphasized by Kostmayer, Dearman,<sup>61</sup> Stadiem,<sup>62</sup> Dannreuther, Sellers, Davis, and others.

Contrary to the opinion of others, Ground feels that hospitalization and anesthesia are required for conization. Kimble, in 1935, believed that the radio-knife and conization destroyed too much tissue and thought that with improved electrodes this objection could be overcome. With his recent instrument, a terminal loop, he now resects longitudinal strips from the cervical canal. Stearns, who recently adopted this modality, has noticed stenosis following its use. Bullard contends that wherever a wound is left open to granulate, connective tissue (scar tissue) of varying thickness is laid down. He feels that this should be expected in conization and electrocoagulation. In Boland's<sup>63</sup> experience with coagulation and conization, he finds the latter superior. The objections of several years ago, because of the high cost of the requisite equipment for conization, are not valid at the present time when small inexpensive cutting and coagulation units are available.

### Major Surgical Procedures

The major surgical procedures for the treatment of cervicitis have, to a certain degree, been supplanted by electrophysical measures in the past few years. In order of simplicity of technique, these operative measures may be listed as trachelorrhaphy, low cervical amputation, Sturmdorf-tracheloplasty, Schroder repair, high cervical amputation, and total hysterectomy. These are recognized classical operations which need no detailed description; all require hospitalization and anesthesia.

Sovak and Bullard prefer surgical measures to the exclusion of all others. Primary trachelorrhaphy, the only advance in surgery in recent years, has already been mentioned. There is a difference of opinion as to whether the repair should be made immediately following delivery or within a week (Hunner, Dickinson,<sup>64</sup> Tracey, Bubis,<sup>65</sup> Ryan,<sup>66</sup> and others). Many use both minor and major surgical procedures, and select the type of treatment based on specific indications, most appropriate for the type of pathology present (Davis, Kostmayer, Offut, Dannreuther, Adair, and others).

Of the operative procedures, the Sturmdorf tracheloplasty is the most frequently used in chronic cervicitis (Hunner, Roblee). Mason and Bullard state that it is the best of the operative procedures. Uhma,<sup>67</sup> Matthews, and others have modified the original technic. In recent years very little comment has been made on the Schröder repair of the diseased cervix.

Young<sup>68</sup> believes that amputation of the cervix, even panhysterectomy, is indicated in a number of cases. Bullard, in a review of 261 cases of cervical leukorrhea, states that for its cure, high amputation is perfect, the Sturmdorf excellent, low amputation good, and trachelorrhaphy disappointing. Costello postpones surgery until after the menopause.

### Summary

According to Fulkerson,<sup>69</sup> 85 per cent of all women suffer from some degree of cervical infection. For its relief and cure over sixty different methods of treatment have been advocated, recommended, and practiced, ranging from simple topical applications to the most drastic operative procedures, necessitating hospitalization and anesthesia. The best known and most frequently used by these have been reviewed in this presentation. Only in some instances have the authors made any reference to the type or degree of cervical involvement, the age of the patient, or the presence of any complications.

Why should there be such a diversity of opinion regarding the treatment of this condition? Each method of procedure has many exponents, with a like number condemning its use. The situation is unique in the bibliography of gynecologic therapy, indicating the existence of confusion in the treatment of chronic cervicitis.

Confronted with this formidable list of therapeutic modalities, the selection of the best method of treatment is at times difficult for the experienced operator and even more confusing to the inexperienced practitioner. Ground has aptly said: "No one line of treatment or procedure is effective in curing all forms of endocervicitis.

No set of instruments, however complicated, can hope to meet all the requirements in more than a small proportion of cases."

Successful therapy must be concerned primarily with the patient who has the disease, rather than the disease that the patient has. In the selection of a therapeutic agent for the treatment of chronic cervicitis, it is essential that patient and anticipated therapy be "harmonized." I use the word "harmonized" as best conveying the idea in mind. Webster defines it as "adjusted." Specifically, what we mean by "harmonizing" is determining the type of treatment in accordance with certain factors present in the individual patient. These are: (1) age of patient; (2) degree of cervical involvement; (3) complicating factors; and (4) previous treatment of the cervix.

Is the patient in the childbearing or postchildbearing period? The age is a deciding factor in determining the type of therapy to be used. A very severe cervical infection (Group 4) in a woman past the menopause would necessitate more drastic treatment than one very much younger with a mild involvement (Group 1).

Matthews' classification is based upon the degree of cervical pathology present and ranges from the mildest form in Group 1 to the most severe in Group 4. Necessarily, the degree of cervical involvement must be our guide in deciding the method of treatment to be used after due consideration has been given to the age of the patient.

Other pelvic pathology and serious systemic diseases must be diagnosed and excluded, wherever possible, before any cervical treatment is attempted. The selection of the type of therapy to be used must then be determined, keeping in mind the age of the patient and the degree of cervical infection.

The effect of any previous cervical treatment is important and must be given due consideration when further therapy is necessary.

Many of the numerous methods suggested for the treatment of chronic cervicitis have definite potentialities if used according to the plan of harmonization. The progressive advances in electrotherapeutic measures have practically outmoded major surgery, for each of the former in skilled hands is relatively simple and has proved adequate in selected cases. However, they are dangerous unless the technic is thoroughly mastered. Far too frequently, the unhappy results encountered by some operators are not due to the method of treatment but to lack of mechanical skill and errors in technical judgment.

No one procedure now in use fulfills all requirements for the cure of chronic cervicitis. The age of the patient, the degree of pathology present in

the cervix, the presence or absence of complicating factors and previous treatment of the cervix should be our index to the selection of the method of treatment. One should be familiar with all, and with an open mind utilize that procedure which best fulfills the requirements of the particular patient.

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## Discussion

**Dr. Milton E. Kahn, Buffalo**—I want to thank the speaker personally for a very informative presentation.

Disease of the cervix is present in a large percentage of patients who present themselves for medical examination. I should like, at this point, to emphasize the fact that it is our duty as physicians to look for it and to treat it.

Careful cervix check-up should be an essential part of a general physical examination. Its exposure by speculum should be a part of every pelvic investigation and still we are all occasionally guilty of its omission. The postpartum cervix should be carefully followed for at least a three months' period and should be normal on discharge of the patient.

I agree with the speaker that the method of treating the cervix should be individualized for the particular patient. The nasal-tipped cautery electrode persistently used will cure many erosions, eversion, and nabothian cystic formations. This is exclusively an office procedure to be done without anesthesia.

The cautery tip should not be heated beyond a cherry-red. Stripings of the cervix are made as described by our speaker. Slightly deeper cauterization at the external os end of the stripings will, with healing, cause the cervical lips to turn in—a desirable end result. A second or third application may be necessary at intervals of three to six weeks.

The conization technic requires local anesthesia and may be an office or hospital procedure. It is indicated in the more extensive cervical disease, with wide eversion, erosion, and cyst formation. Carefully performed, its complications are few. Occasionally, however, hemorrhage or stricture may result. The first can be largely avoided, as the speaker has said, by a thorough knowledge of the intensity of the current used.



As to the second, the passage of cervical dilators, one, two, and three months later, will almost certainly avoid any troublesome stricture. Some of us have coned the cervix, even though it appears essentially normal, as a routine preliminary to supracervical hysterectomy. This removes the junction of the columnar epithelium of the cervical

canal with the squamous epithelium of the portio, an area where carcinoma may take its inception.

Finally, may I emphasize the need for biopsy and pathologic examination of all suspicious cervix tissue. Such routine handling of all conization specimens may occasionally uncover an otherwise unrecognized malignant lesion.

## SPANISH MEDICINE

The Prime Minister's recent references to Spain provide an occasion for reflection on the history and present condition of medicine in that country. Almost exactly one hundred years ago an English traveller of exceptional discernment described, among other characteristics of the contemporary Spanish scene, the low standard of medical education and practice, the menial position of the medical profession, and the hostility of Church and aristocracy to progress. He asked "Can it still be wondered that their textbooks and authorities should too often be still Galen, Celsus, Hippocrates, and Boerhaave?" adding that "the names of Hunter, Harvey, and Asley Cooper are scarcely more known among their M.D.'s than the last discoveries of Herschel." That Spanish medicine should have lagged so far behind is remarkable when one considers the important part played until the thirteenth century by Spain, and especially by the School of Translation at Toledo, in the rediscovery of Graeco-Roman, and the transmission of Arabic medicine. In succeeding centuries the darkness is hardly relieved except by Miguel Servet (Servetus), who, bold enough to question Galen but not bold enough to face the ecclesiastical music, fled from Catholic Spain to Calvinistic Geneva, only to perish a victim of fanaticism equally ruthless in its opposition to truth and light.

There are evidently some in Spain who feel that their country does not receive a just recognition in foreign medical histories. Thus, the translator of the Spanish edition of the standard English-language work found it necessary to add a 103-page appendix on the history of Spanish medicine. Similarly, a Spanish edition of a popular English history of surgery is amplified by a 51-page appendix on "Surgery in Spain." It must be confessed that a reading of these appendices does little to encourage the view that important Spanish contributions have been overlooked. Yet in the Arts and those other fields of human endeavor by which a nation's progress is measured Spain occupies a sure and important place, and those Spanish medical men who have in recent years found the opportunity to work in clinics and laboratories in Britain and the Americas have shown no lack of scientific talent and aptitude. The reason for this poverty of medical science in a nation whose natural genius cannot be doubted must surely be sought in the anachronistic survival of that spirit of authoritarianism which is the mortal enemy of experiment and discovery.

In a search for significant Spanish contributions to the body of medical science it is necessary to turn to one who died only ten years ago in Madrid—Santiago Ramón y Cajal. Even Cajal lamented

that Spain owed almost all it had of science and technology to other countries. In a paper read recently in Spanish at the newly founded Instituto Español in London convincing reasons were given for regarding Cajal as the most illustrious Spaniard of the last century. Without belittling the importance of the arts, of philosophy, and of religion, it is not by these paths, but through science, that Spain must find her salvation in the twentieth century. The layman may find it difficult to appreciate the greatness of Cajal's work, which was in the domain of fundamental biological science and did not result in those practical applications which attract popular interest and acclaim, but apart from the direct value of his work, it would be difficult to overestimate the indirect influence of Cajal on Spanish thought. He opened the eyes of many Spaniards, who, then and since, first saw beyond authoritarian barriers the more spacious world of scientific inquiry, criticism, and objectivity, and to them his memory remains an inspiration which forms a link between those in exile and those at home. For the first time medical scientists of other countries found it necessary to learn Spanish in order to follow new discoveries in the original. The many honors which were showered upon Cajal from abroad at a time when the national prestige of Spain was at its lowest ebb had an important effect on the public and official attitude to science. It is interesting to speculate upon what would have been Cajal's view of the position of Spain in the present world-wide conflict. Perhaps the answer may be found in his own words: "In the democratic State all liberties are sacred except one—the negation of liberty. And all rights are legitimate except this—the mental deformation of future citizens. We respect as sacrosanct the precious germs of reason, for they belong not to us but to God."

There is evidence that the values for which Cajal stood have not been entirely extinguished in the Spain of today, and recent British visitors have spoken with particular enthusiasm of the research on nutritional deficiencies which is being undertaken in the institute at Madrid directed by Prof. C. Jiménez Díaz. Spanish has not hitherto been regarded as a medically or scientifically important language, but in Argentina, Mexico, Chile, and elsewhere in the Spanish-speaking world active centers of medical investigation exist or are developing, and it seems not unreasonable to suppose that Spanish will in the future achieve an important position not only as the language of saints and soldiers, of poets and philosophers, but also as a medium for the communication of discoveries in medicine and other scientific fields.—*British M J June 17, 1944*

# GOALS AND OBJECTIVES IN PSYCHOTHERAPY

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THERE are some neurotic patients so keenly intent on getting well that they progress almost spontaneously to cure in an atmosphere of helpfulness and understanding such as is provided in the physician-patient relationship. The majority of patients, however, left to their own resources, stumble into emotional blind alleys from which they cannot extricate themselves without considerable help from the physician. To a large extent this help involves active direction toward mental health goals and objectives. Experience has shown that where psychotherapeutic aims fall short of adequate goals a relapse of illness is almost inevitable.

What criteria can we use to evaluate the adequacy of our objectives? Is freedom from symptoms a sign that the patient has returned to health, or are more subtle changes in personality to be desired? Should treatment cease when we have acquainted the patient with his character assets and liabilities and have shown him how to pattern his life around them? Is the goal of normality a permanent alteration in the character structure, and must this alteration be in harmony with the character of the average person in the culture? How much are we to stress a liberation of the self from the shackles of repressive mores, and how wise is it to encourage the expression of biologic promptings at variance with the cultural norm?

There are some schools of psychotherapy whose sole objective is the removal of symptoms. Anxiety, conversion manifestations, phobias, obsessions, compulsions, depression, and psychosomatic phenomena are looked upon as isolated entities that impair the functional efficiency of the psyche like a diseased gall bladder upsets the entire digestive system. Suggestion, persuasion, thought control, progressive relaxation, purposeful forgetting, and the plunging of the self into extroverted activities are aimed at the symptom as if it were a foreign body whose presence obstructs an otherwise intact psychic mechanism.

No issue is taken with the occasional successes scored by this type of therapy. Successes do occur and there are certain personalities who are able to forestall complete emotional collapse by practicing such devices as "riding their symptoms," substituting innocuous for painful thoughts, frenzied pursuit of social activities, and a punctilious observance of ritual and prayer.

In justification of this therapy it must be said that many persons refuse to accept more intensive treatment or are so intellectually or financially handicapped that a more exhaustive analysis of their problems is beyond their means. In these cases the mastery of symptoms helps the individual gain freedom from excruciating distress and, in some instances, permits him to attain to a more useful existence.

Nevertheless, one must not minimize the superficiality of this approach, for the dynamic sources of tension and anxiety go untreated. It is as if in foot pain resulting from a hobnail we were to concentrate on the mastery or the deadening of pain and totally neglect the repair of the shoe.

To illustrate this more concretely we might consider the case of a man who sought treatment for heart palpitations, difficulties in breathing, and various phobias which incapacitated him so that he had to give up gainful employment. His childhood had been spent under the tyrannical pressure of a neurotic, domineering mother whose own need for mastery and power impelled her to bring her son completely under her control. Blind compliance and submission were rewarded with indulgences, while any display of rebelliousness or desires for independence brought threats of abandonment and punishment. Self-strivings, such as assertiveness, investigative curiosity, and self-fulfillment, were stifled as they emerged until the child developed into a crushed creature of his mother's will with a lack of initiative and with convictions that he lived solely by his mother's grant. Powerful hostilities and resentments generated themselves constantly as he was forced to smother his independence and assertiveness. But because any outward display of rage aroused the wrath of his parent, the boy found it mandatory to repress all overt expressions of his indignation.

As he matured his interpersonal relationships patterned themselves around an overvaluation of the capacities and aptitudes of other people, an automatic yielding to their wishes and demands, and a minimization of his own rights and abilities. While he conformed to the letter of what he felt was expected of him, he burned inwardly with resentment which became more and more overwhelming as time went on. Subversively he expressed his resentment in the form of stubbornness and a negative attitude directed against the world at large. His defiance mounted and finally reached a peak in his relationship

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with his wife, toward whom he reacted as if she were virtually a reincarnation of his mother. He felt exploited and trapped until he could no longer conceal his resentment from her. Episodic outbursts of aggression were invariably accompanied by anxiety, with heart palpitations, choking sensations, feelings of helplessness, and fears of impending death. Contrition, remorse and various acts of penitence compulsively followed. Nor could feelings that it was wicked and immoral to hate his spouse crush the rage that seethed within himself. He conjured up fantasies of his wife being murdered and soon he developed an obsession that he would lose control and unwittingly stab her to death. These thoughts terrified him so that he developed a fear of knives and other potentially lethal instruments, the sight of which precipitated anxiety attacks. Terror dreams of being cut up and mutilated added to his distress, and he finally begged to have his hands tied to the sides of his bed so that he might not murder his wife in a somnambulistic rage.

It is obvious that mere treatment of the patient's anxiety and other symptoms could accomplish little in correcting the causes of his illness. Actually the patient had received palliative psychotherapy for several years with relatively little improvement. For a while he had taken refuge in religion and had found some solace in the concept of an omniscient deity who might reward his compliance to fate with bounties in the hereafter. During the period of stability that followed it was obvious that his new-found philosophy restored the balance of power that had existed in him as a child reinforcing the defensive structure that had up to the time of his illness kept him free from anxiety. As might have been anticipated, however the deity soon became invested with the ghoulish qualities of his mother and he became convinced that hell's fires awaited him despite his devoutness.

During treatment the same attitudes developed toward the writer, who at first became the embodiment of wisdom and generosity. Slavishly the patient complied with his most casual remarks as if these were edicts he must obey. A complete abatement of symptoms followed for a short while, but as the patient found that his compliance made inroads on his own independent wishes, he began to experience feelings of bitterness, and he accused the physician of having dictatorial designs on him. A return of murder fantasies, anxiety attacks and phobic symptoms almost caused him to interrupt treatment. Painsstaking analysis of his character trends as revealed in his existing relationship eventually led to insight and to a changed attitude toward people and toward himself.

In those cases where symptoms are the outcome of crumbled character defenses, mental stability can sometimes be achieved by restoring the defenses, even though these are neurotically determined. Indeed, where the choice lies between the intense suffering associated with symptoms and neurotic character defenses, the latter are by far the lesser of two evils. One can at least live with a character neurosis, even though one's pursuits must be rigidly circumscribed. On the other hand, it is almost impossible to function with persistent tension and anxiety.

How a restoration of the status quo of a neurotically oriented character structure can produce a disappearance of symptoms was clearly seen in the case of a patient whose depression and hypochondriacal symptoms originated with the death of a parent to whom he was inordinately attached. Unlike other members of the family, who passed successfully through phases of grief and mourning as a result of their bereavement, the patient somehow could not arouse himself from a melancholic outlook. The family physician, a general practitioner, prescribed benzadrine and tonics without avail, and the patient became convinced that he was suffering from a mysterious inner malady which necessitated daily visits to the doctor. These visits consisted of doses of reassurance administered after detailed accountings by the patient of his most minute somatic complaints. It was obvious that he had always been compulsively dependent on his parent, whose departure left him helpless and insecure. As time went on he became more and more dependent on the physician, and soon he entered into a relationship with the doctor of a type identical to his previous relationship with the deceased parent. The physician actually became a substitute parent and psychic balance was restored, with a disappearance of symptoms, until he was forced by relatives to give up his daily visits.

A catering to neurotic character drives is the goal of some forms of psychotherapy which strive to bolster the defenses of the person in order to bring him back to some kind of biopsychic equilibrium. If the patient gets into trouble with people, it is recommended that he operate on the periphery of social relationships. If he must succeed in every task and accomplishment, he might change to an inferior line of work which he can master and perform flawlessly. If he fails as a creative artist, he may be unparagoned as a sign painter. If he has problems in competition then he had better confine his operations to a noncompetitive sphere. If he fears sex, he had best develop interests of a dispassionate nature.

As in therapy directed at the mastery of symp-

toms, this type of treatment, although superficial, may help some patients who are unable to avail themselves of deeper treatment. Thus a homosexual, whose love affairs always terminate in self-destructiveness or homicidal impulses on the basis of feelings that he has been taken advantage of and humiliated, may be assured, with reasonable certainty, that he would probably be more comfortable if he avoided homosexual alliances. He would himself discover, too, that while life lacked a certain sparkle and excitement, he really was better off in the long run if he maintained a detachment from people. However, we must not delude ourselves into thinking that this is the total answer to his problems, for the homosexual drive may really be a frantic groping for some kind of human relationship with a member of a sex who resembles himself and is therefore less terrifying than a person of the opposite sex.

There is always a danger of classifying neurotic character traits as either assets or liabilities, striving psychotherapeutically to foster or discourage them as such. We must scrupulously assay the standards by which we judge traits as either good or bad. The culture enters into our appraisal to some extent, but personal prejudices play a far greater role than we are wont to admit.

The physician should charily regard as assets character traits and drives which, though culturally condoned, are actually at variance with the patient's best interests. As a matter of fact, most patients incorporate within the framework of their neurosis cultural ideals and standards which they believe in some way will resurrect their self-esteem or will enable them to gain love and praise from those they admire. The cultural ideal may be that of ambitiousness or perfectionism or rugged individualism. The patient will misconstrue these ideals, not as means to an end, but rather as ends in themselves. Ambitiousness may thus become a consuming force that drives the person into destructive competitive relationships breeding murderous attitudes toward those who in any way impede his objective of success. He may become tremendously hostile toward his associates and abandon cooperative goals that would contribute to his real happiness and security. Achievement and superiority may become the basis of his whole existence and rob him of opportunities for self-enjoyment. Strivings for perfectionism may cause him to plunge himself into an aimless repetition of details and inhibit him from entering into any form of activity that does not prove his proficiency. The cultural ideal may stress a certain measure of self-sufficiency and individualism. Yet the neurotic will interpret this as a sign that he must resent any intrusion on his own privacy, and his security may hinge upon how successfully he can

divorce himself from others. The culture may perpetuate power strivings, with the result that the neurotic will make strength a fetish and come to despise the slightest weakness in himself or others. The maintenance of an invincible status becomes his sole function in life. To be sick, to fall in love, to yield to the suggestion of anyone else, to fail to foresee the future are considered catastrophic signs of weakness. He may therefore strive to cope in a masterful way with the most inimical situations and shy away from recognizing any limitations in his own abilities or capacities.

Certain cultural ideals may therefore conflict with the attainment of fundamental biologic and social needs. It is essential that the physician understand this since he, himself, may operate under a cherished set of attitudes which constitute for him the highest goal to which any human being can attain. Thus, if he puts too much value in ambitiousness, perfectionism, detachment, dependency, narcissism, or power devices, he is apt to consider these real assets if they happen to appear in his patients. A word of caution must especially be extended toward the group of attitudes collectively embraced under the term of compliance. A reasonable compliance to authority is a necessary thing, but compliance is too often utilized by neurotic persons as a form of security. This is most often the case in those cultures in which the child is a nonentity who is expected to submit himself without question and yield without complaint to the dictates and commands of stronger, more authoritative individuals around him. Where the physician himself, has been reared in an atmosphere that makes compliance an attitude tantamount to good breeding, he is apt to expect the patient to accept his advice and interpretations without protest. The patient may sense this trend in the physician and try hard to please, even at the price of crushing his self-strivings and his need for independent thought and action. The physician may also, because of his own character structure, consider any aggression a sign of recalcitrance and ill will. It is necessary to remember that the primitive emotion of rage is not always a liability and under some circumstances may be a healthier manifestation than a blind submission to authority.

In estimating whether certain character strivings are normal or abnormal, it is essential to consider both cultural and biologic factors. The healthy individual derives pleasure from creature-comforts in life—from food, rest, relaxation, sex, work, and play. He is capable of satisfying these impulses in conformity with the mores of the group and is able to mobilize his intellectual and experiential resources to fulfill his needs.

In every culture the expression of vital needs is subject to some repression, and often there is a direct conflict between cultural and personal standards.

Considering what norms the physician should follow, it is helpful to steer a course somewhere between the Scylla of cultural pressures and the Charybdis of biologic demands. Where the latter conflict with the cultural ideal, it is always essential to have in mind the effect of repression on the individual. On the other hand, it is necessary to adjust the person to the dictates of society, helping him to develop technics through which he can satisfy his biologic needs in a culturally condoned manner. For example, while the ability to express oneself sexually is a physiologic aim, it might be disastrous to the individual to advise that he indulge himself sexually without satisfying certain social requirements and standards.

In general, the objective most-consistent with mental health is a personality which effects a harmonious balance between personal and group standards, between cultural and individual ideals. This presupposes the expression of adequate and realistic goals that contribute both to the welfare of the self and the group.

Perhaps the best criterion of progress during treatment is an improvement in interpersonal relationships. This improvement is a prime objective in therapy. The individual must be able to relate oneself congenially to his fellow creatures, to give and to receive love without indulging neurotic character strivings in the form of detachment, needs to dominate or to be enslaved, or desires to render himself invincible or perfect.

He must be able to assume a subordinate relationship to authority without succumbing to fear or rage. He should, in certain situations, be capable of assuming leadership without designs of control or power. The well-integrated person should be able to withstand a certain amount of deprivation and frustration without anxiety when he feels these are reasonable, are shared, are necessary to the group welfare, or when consequences of impulse indulgence entail more than their worth in compensatory pain. His capacities for adjustment must be

of defense or in fantasy.

A further objective is a healthy regard for himself as an individual. This embraces self-knowledge, a willingness to face the past and to isolate anxieties relating to childhood experiences from the present. It involves a realization of his limitations and the ability to fulfill himself creatively within the bounds of these limitations.

It includes self-confidence, assertiveness, a sense of freedom, spontaneity, and self-tolerance.

Unless these objectives are achieved through psychotherapy, the dynamic framework of the neurosis remains untouched, and while the individual may make a tolerable adjustment to life, he will be unable to live up to his full capacities and aptitudes. He will be at the mercy of unconscious fears and impulses which will necessitate perpetual defenses and needs for control. He will be victimized by compulsive character drives which induce distortions in his sense of values and make the normal pursuits of life vapid and meaningless.

### Summary

Emotional illness represents a collapse of the psychic resources of the individual when he is unable to fulfill biologic impulses and social demands. The immediate consequences of this collapse are symptoms which constitute the various manifestations of neuroses. Goals and objectives of adequate psychotherapy involve not merely a dissipation of symptoms, but a reintegration of the patient as a working unit in society to a point where he can function successfully in his relationships with the others. This necessitates a careful inquiry into neurotic character drives which must be scrupulously uprooted, even though they are imbedded in what seem to be culturally condoned attitudes and values.

The physician should investigate carefully the standards by which he judges the patients' strivings as either assets or liabilities. This is necessary to avoid pandering to the patients' neurotic traits, reinforcing them at the expense of vital biologic and social needs.

The criterion of a real mental cure lies in a replacement of neurotic character strivings with those which will enable him to relate himself productively and creatively to his environment. This objective must be reinforced by liberation of the individual from anxieties and fears that are rooted in past experiences and conditionings.

Mental health presupposes self-growth and development of the ego to a point where it can cope realistically with inner strivings and environmental pressures. The individual must evolve into a free moral agent who has the ability and willingness to make his own decisions and to take the consequences of his own acts. There must be an adaptive choice of ends and means and an ability to act without undue restraint from others. Capacities to plan one's life and to develop goals and ideals in harmony with the disciplines of society are vital. A sense of inner freedom, independence, assertiveness, and self-reliance are other requirements of a well-balanced personality.

Unless these objectives are fulfilled in psychotherapy the person will be incapable of functioning efficiently in his complex social environment

and will be at the mercy of tensions and anxieties which eventually may induce a relapse of emotional illness.

## WILLIAM HARVEY (1578-1657) AND THE VALVES IN THE VEINS

Shortly before William Harvey died, Robert Boyle, the versatile natural philosopher, betook himself to call upon the aged physician to ask what had led him to the discovery of the circulation of the blood. Boyle was then in his middle or late twenties, and Harvey was approaching 80. In a philosophical discourse on other matters Boyle gave the following account of the famous interview:

"I remember that when I asked our famous Harvey, in the only Discourse I had with him (which was but a while before he dyed) What were the things that induc'd him to think of a *Circulation of the Blood*? He answer'd me, that when he took notice that the Valves in the Veins of so many several Parts of the Body, were so Plac'd that they gave free passage to the Blood Towards the Heart, but oppos'd the passage of the Venal Blood the Contrary way: He was invited to imagine, that so Provident a Cause as Nature had not so Plac'd so many Valves without Design: and no Design seem'd more probable, than That, since the Blood could not well, because of the interposing Valves, be Sent by the Veins to the Limbs; it should be Sent through the Arteries, and Return through the Veins, whose Valves did not oppose its course that way."

This statement is indeed significant, and I believe it gives the clue not only to the epic discovery, but also to the real basis of Harvey's contribution to scientific medicine. Many others had seen the valves in the veins, but no one had paused to inquire into their functions by means of experiment. Prior to Harvey, to be sure, there had been speculation from the pens of those who had also observed these structures. Salomon Alberti, who gave the first illustration of a venous valve (1585), interpreted their probable function in terms of the Galenic concept of the circulation, as did also Harvey's master, Fabricius ab Aquapendente, in his monograph "*De venarum ostiis*" (1603), recently translated into English by Dr. K. J. Franklin.

The story of Harvey's life is known only in outline, but such details as have come down to us are highly significant. Born at Falkstone on April 1, 1578, the eldest of nine children of Thomas Harvey, a Kentish yeoman, he entered Cambridge University in May, 1593, graduated with the B.A. degree in 1597, and ultimately became a Fellow of Gonville and Caius College. Late in life he also passed a year or two in Oxford (1645-1646) as Warden of Merton College.

After obtaining his B.A. in 1597 from Cambridge, Harvey, like Thomas Linacre one hundred years earlier and John Caius some fifty years before, repaired to Italy where he remained for five years,

passing the greater part of his time at the University of Padua under the influence of the distinguished anatomist, Fabricius ab Aquapendente. Harvey took a medical degree at Padua on April 25, 1602, and the celebrated Harveian "stemma"<sup>1</sup> is still to be seen in the *Aula Magna*. During his years at Padua Fabricius frequently demonstrated to his classes the venous valves which he so fully described in the monograph published shortly after Harvey had departed. On returning to England Harvey apparently meditated upon his experiences with Fabricius and, probably in 1609, began a series of experiments which ultimately led to the great discovery.

Meanwhile he was "incorporated" M.D. at Cambridge in 1602 and was elected a Fellow of the College of Physicians on June 5, 1607. Two years later (October 14, 1609) he attached himself to St. Bartholomew's Hospital as "Physician to the Hospital." He received an Oxford M.D. on December 7, 1642.

In his Lumleian lectures given to the College of Physicians in April, 1616, the notes of which are still preserved, he first gave the essence of the discovery in the following cryptic language:

"On account of the structure of the heart, William Harvey is of the opinion that *the blood is constantly passed through the lungs into the aorta, as by two clocks of a water bellows to raise water*. Moreover, on account of the action of a bandage on the vessels of the arm he is of the opinion that *there is a transit of blood from the arteries to the veins*. It is thus demonstrated that *a perpetual motion of the blood in a circle is brought about by the beat of the heart*. What shall we say? Is this for the purpose of nutrition? Or is it for the better preservation of the blood and of the members by imparting heat to them, the blood by turns losing heat as it warms the members, and gaining heat from the heart?"

Here is the essence of the discovery: "There is a transit of blood from the arteries to the veins." It was announced formally to the world in 1628 and it now seems clear that Harvey was led to make this great scientific deduction through having recognized the significance of the valves in the veins.

Undoubtedly there are many other discoveries "just around the corner" for those who are willing to appraise by means of experiment structures of unsettled use.—John F. Fulton, M.D., in *North Carolina M. J.*, May, 1944

<sup>1</sup> Denoting that in 1600 he stood as Councillor for his fellow English students—"The English Nation," as groups in the student body at Padua from a given country designated themselves.

# THE COMMON COLD\*

HARRY ADLER, M D , Elmira, New York

THE common cold is a major medical and economic problem Piersol<sup>1</sup> and others report that 50 per cent of sickness-absenteeism in industry is due to acute infections of the upper respiratory tract However, one can only approximately estimate the amount of time lost from work as a result of a cold, and one will find it difficult to estimate the extent of suffering and hardship caused by the common cold, to say nothing of the countless millions of dollars spent by the public in its futile effort to obtain some relief

Consideration of the common cold has received a great deal of space in almost every publication imaginable A feeling of futility still confronts the physician when he is called to the bedside to treat the patient with a common cold He is aware that he does not have at his disposal a proper therapeutic agent or an accomplished procedure more effective than bed rest

The public has been either misinformed or not properly informed, and consequently, self-treatment and care in many instances are harmful There is an attempt in industrial medicine and in public health to bring home pertinent facts and rules However, such publications<sup>2,3</sup> should avoid statements that can be misunderstood, for such misunderstanding is bound to lead either to neglect of treatment or to incorrect application of it For example, one might question the advisability of stating that "in most instances, of course, special medical treatment for colds is unnecessary" Patients have been frequently told to use as treatment an abundant supply of handkerchiefs Patients are being advised as routine therapy to use laxatives and large amounts of alkaline drinks This form of therapy forms the basis of many extensively advertised commercial products It may be theoretically correct to say that a common cold is self-limited and of itself is of little consequence Observation compels us to seriously question the accuracy of this statement, and it is our impression that therapy is more apt to be improved when we refuse to accept any disease as being self-limited We quote Piersol "when lay and professional apathy toward the consequences of minor illnesses shall have been overcome, a definite beginning will have been made toward the control

of acute respiratory-tract infections and their sequelae"

The confusion of thought as to the cause and management of the common cold prompted me to undertake a study of the current literature in this field and to try to provide a more rational approach to its management

Kerr and Lagen<sup>4</sup> define a common cold as an acute inflammation of the nasal mucous membrane with general constitutional manifestations

Discussion of the causation of the common cold can be broad in scope Many authors believe that the offending agent is a filtrable virus Turner<sup>5</sup> made an interesting observation on normal children when they were exposed to childhood diseases Many who did not come down with the disease to which they were exposed came down instead with symptoms of upper respiratory infection This was also observed among adult teachers Thus, there arises the possibility that many organisms may be the cause However, a great deal still remains unexplained about causation Is an organism always the primary of sending agent? Kerr and Lagen, Hamilton,<sup>6</sup> Walsh,<sup>7</sup> Stewart,<sup>8</sup> Spavens,<sup>9</sup> and Goodyear,<sup>10</sup> lay stress on the role that chilling plays in causing colds Kerr and Lagen argue that repeated trauma to the mucosa by sudden changes in temperature is a factor, along with lowered body resistance, and that the result is a breakdown of the delicate layers of the nasal mucosa—the typical picture of inflammation in which the presence of bacteria or virus need not necessarily be assumed However, the injured tissue provides a suitable culture medium for secondary invaders The same authors also stress as causative factors fatigue (mental and physical), overeating of one or many types of food, anatomic defects, presence of foci of infection, constitutional illness, dietary insufficiencies, exposure to hot air, and emotional disturbances, as reported by Spiesman<sup>11</sup> Walsh<sup>7</sup> reports that the cilia function most effectively at 32 to 60 F At 72 F they are retarded and at 78 F ciliary action ceases It is, therefore, apparent that people, as far as possible, should avoid room temperatures above 72 F during the cold months Stewart considers as a causative factor the daily intake of moderate amounts of any fruit juices—this cause we believe to be important because of the excessive use of fruit juices in the present-day quest for "increased resistance" and vitamins He also lists as a cause hyperventilation Hyperventilation is more apt to be ha " " dur

From the Hospital of the Elmira Reformatory Leo J Palmer Superintendent

\* This study was conducted by the author The administration of treatment and the collecting of the statistics were done by the staff of the Hospital of the Elmira Reformatory—Editor

sleep. There is no doubt that, in a search for fresh air, the people have adopted another fad. There is, therefore, need that the public be better informed of proper health precautions against the common cold.

Review of the physiopathology of the nasal mucosa is essential to a better understanding of the phenomena accompanying the cold. It is important to note that a rich capillary system is distributed throughout the connective tissue of the mucosa, and that around the ducts of the glands, the mouths of which usually lie in some sulcus of the surface epithelium, there is an especially rich network of capillaries. It is seen, then, that vasomotor dilatation of these capillaries must result in considerable constriction of the outlets of the glands and at the same time would produce serous exudation through the mucosa into the nasal cavity. As the vasomotor excitement subsides, this constriction is released and free discharge of the contents of the mucous glands is allowed. It is said that the secretion from the racemose glands of the respiratory part of the membrane is in itself considerably bactericidal. These views are held by Lillie<sup>12</sup> and Fox.<sup>13</sup> However, Lillie further states that the watery discharge during an upper respiratory infection is not bactericidal in action.

and Fabricant<sup>14</sup> report that the normal pH 5.5 to 6.5 changes to alkaline during acute rhinitis. We thus are confronted with a deranged physiologic process, the sequelae of which are the typically subjective complaints of the patient: to wit, general malaise, head fullness, and the irritating nasal discharge, all of which typify acute coryza.

From a clinical standpoint the nasal discharge is the most important. It now provides a seemingly excellent medium for the growth of bacteria. With and following bacterial invasion this originally watery exudate now becomes mucopurulent and its extension, either by blowing or sneezing, carries the infection not only to the accessory sinuses, eustachian tubes, etc., but also into the atmosphere, where it is the vehicle by which contagion is spread. Furthermore, the presence of any nasal discharge interferes with normal ciliary action, nullifies the usual bactericidal properties of the normal nasal secretions, and prevents medication introduced into the nose from making direct contact with the tissues themselves, and when cold air enters the nasal cavity this watery nasal discharge quickly becomes chilled and in turn further intensifies the chilling of the underlying tissues. It is highly probable that the disorganized physiologic activity of the mucosa and submucosa lowers their resistance against a deeper invasion of the organism.

At present we are not in complete accord about the relationship between causation and physiology. Some authors place emphasis on the chilling and the resultant disturbed process. Other authors believe that the disturbed process follows the invasion, be it virus or bacterial. We may, however, surmise that the vascular engorgement and the invasion phenomena are so closely related that, for practical purposes, the two phases may be considered to occur simultaneously.

In focusing our attention on treatment we are confronted by two problems. We must combat the bacterial or virus invasion and the engorgement. The phenomenon of engorgement results primarily from a disturbance of normal physiology. Treatment should then be aimed at restoring the tissues and their function to a normal state or balance. Thacher and Hauser<sup>15</sup> experimented along this line in treating patients with hypertrophic rhinitis with submucosal injections of sodium morrhuate. They reported that postnasal dripping diminished and that headache and head fullness subsided. To date, various treatments have been used in an attempt to achieve a variety of objectives. Some of these treatments, however, do not appear to have been considered in the light of current physiologic concepts.

Williams<sup>16</sup> condemns the indiscriminate use of vasoconstrictors as practiced by the public, because of the nasal congestion as a result of the secondary and refractory relaxation that follows the primary constriction. Cowan<sup>17</sup> reported that benzedrine used to shrink mucous membrane as an abortive for colds, in an experimental series, produced negative results. Walsh, in condemning most nasal applications, states that medications in oil are too heavy for the cilia, mix poorly with mucus, and thus barely reach the epithelium. Hypo- or hypertonic watery solutions cause destruction of cilia, and ephedrine causes almost immediate cessation of ciliary function. One per cent commercial silver preparations do chemical injury to cilia, and bacteria which have been in these solutions forty-eight hours are still viable. Williams<sup>16</sup> and Lillie<sup>18</sup> object to nasal drops or sprays of constrictors because they help carry infection from nose to pharynx and below. It would seem, then, that the immense amount of vasoconstrictors used by patients is a serious consideration because of the harm done.

The profession, in need of a good therapeutic agent, received vaccine therapy very enthusiastically because the first reports were favorable. Smillie,<sup>2</sup> Diehl,<sup>19</sup> Hauser,<sup>20</sup> Stafford,<sup>21</sup> Hamilton,<sup>6</sup> Stanley,<sup>22</sup> and Holbrook<sup>23</sup> conducted various studies on the use of vaccines, and these studies



lead us to several conclusions. Persons who have received vaccines as a prophylactic either by hypodermic or by mouth report that they had fewer colds. However, others who received placebos reported the same degree of improvement. It is interesting to note that many in the placebo group were so impressed by the results that they returned the next year for another course of what they thought was cold vaccine.

If we consider the filtrable virus as a cause of the common cold, we then raise a question as to the value of bacterial vaccine as an immunizing agent against a virus, and how we can expect the vaccine to influence the onset of colds. However, if we consider bacterial invasion as a secondary invader, we can approach vaccine therapy from a different aspect. The question arises, can we expect vaccine therapy applied during the illness to confer immunity against the secondary bacterial invaders and thus curtail the unpleasant complications? The literature about the use of vaccines during the course of the cold is meager. We are using the vaccines in catarrhal otitis media and have found this treatment highly useful in avoiding purulent otitis media. In chronic upper respiratory and tracheobronchial infections we found recovery definitely hastened. However, our results in the latter group are not consistent. There is a possibility that a stock vaccine may have too few organisms for a particular patient. Epidemics vary and the organisms involved also vary from time to time. Walsh<sup>24</sup> conducted experiments with animals and, after observing anatomic changes in the mucosa caused by vaccine sprays, felt that this procedure might be of value to humans, and reports apparent good results in a study of its use in humans. We thus come to the conclusion held by several writers, that vaccine therapy is efficacious if applied properly and under certain conditions.

There are other studies and reports worthy of mention. Cantor and Berman<sup>25</sup> advocated the use of a suction syringe to aspirate nasal discharge in children. This remedy is of value in aiding removal of some of the obstruction and affording temporary relief. Dolowitz<sup>26</sup> used Pickrell's solution (sulfadiazine solution) as a spray on a group of nurses who had colds in the early stages, and observed fewer complications in the treated group than in a control group. Turnbull<sup>27</sup> used a similar solution with similar results. The recent popularity of vitamins has resulted in including these substances as agents for the prevention and treatment of colds. Spiesman,<sup>11</sup> in his study, used massive doses of vitamins A and D and obtained negligible results. Cowan<sup>19</sup> and his group used vitamin C and concluded that the fortune spent on vitamin C as a cold

preventive was not justified. Cowan,<sup>17</sup> in other studies, used benzedrine as an abortive and in another study used codeine-papaverine mixture. In both instances the results obtained in the treated and control groups were similar. Rawlins<sup>28</sup> used sulfur dioxide gas on 80 patients, 66 were appreciably aided. Those who had had a cold three to four days were not helped. However, it is difficult to recommend sulfur dioxide gas for routine use, for obvious reasons. Siegel<sup>29</sup> used sulfadiazine in acute respiratory infection and observed that "signs of infection, such as coryza, still persisted in many cases, but that the infection appeared to be subsiding as if the inflammation had abruptly passed the acute stage. Those whose temperatures remained below 102 F usually did as well as the treated group."

The work of Siegel and others brings forth several observations.

It is not advisable to use sulfadiazine routinely in colds.

The distressing symptoms of coryza are in part due to physiologic disturbance.

Our approach to relieving symptoms of coryza need not be an antibacterial one, although as yet we have made no other type of attack.

True, we have made some slight progress in combating complications by the use of either vaccines or chemotherapy. We maintain, with Fox and Fabricant, that the patient with a cold is distressed by the marked exudation which follows the engorgement of the nasal mucosa.

We are, therefore, confronted with the necessity of providing relief from this condition to patients who are distressed during the early stages of coryza, and our course should take into consideration certain physiologic principles. We searched for an agent compatible with most medication easily administered, nontoxic, and that it would avert or relieve tissue engorgement—this latter being one of our principal objectives. Sodium chloride seemed to possess most of the desired properties.

It is therefore pertinent to consider the chemistry and the physiology of sodium chloride in the tissues and to study the effects of ingestion of large doses of it.

Sodium chloride is reduced to sodium and chloride ions in the tissues, and when the ions are increased in the extracellular tissues, there results a flow of fluids from the cells to the extracellular tissues. This is a simple osmotic principle. The fluids then gradually follow the sodium ions to the blood and thence to the kidneys.\* The withdrawal of fluids from the cells

\* Any reader desiring greater details concerning sodium chloride chemistry is referred to Cantrill's<sup>30</sup> fine monograph.

of the nasal mucosa is therefore bound to cause a decrease in secretion from the glands and from the mucous membrane of the nose. Physiologically, sodium chloride administration, with its resulting decrease in exudation, does not interfere with ciliary action, does not interfere with bactericidal properties, averts further chilling of nasal tissue, the formation of a favorable medium for bacterial growth, nasal obstruction, and fullness of the head, and permits close contact between medicinal sprays and the mucous membrane, and, finally, averts spread of the infectious exudate to other tissues.

The next logical step was a study of the toxicity of large amounts of sodium chloride. Cutting<sup>31</sup> administered to animals lethal massive intravenous infusions of sodium chloride. He found that recovery is complete if the infusion is stopped before death—that is, before the blood pressure begins to drop—that the cerebrum is the only organ that does not store water, and that within twenty-four hours all salt is excreted. Trusler<sup>32</sup> reported that the adult body contains about 300 Gm. of salt and that about 25 to 30 Gm. are in the blood. Gamble gave a group of patients 20 Gm. daily for three days. By the third day the kidneys had regained control of the salt and water balance. He also stated that total change in extracellular sodium electrolyte is  $\frac{1}{10}$  of normal during this experiment. Salt has recently been more and more recognized as an essential constituent of our daily food intake. The ingestion of large amounts of sodium chloride for a short period is not harmful.

In our institution the first group of patients who received salt treatment rendered subjective reports that were more favorable than was anticipated. Patients stated that they could breathe through the nose with more ease and that secretion diminished markedly within an hour after the ingestion of salt. This decrease was followed by improvement in the feeling of fullness of the head. As a further improvement, sneezing and nose-blowing became much less frequent and general malaise was reduced. Goodyear<sup>10</sup> made a similar observation, apparently, when he stated that "table salt will abort a cold quicker than most remedies."

Our first group of patients who were given salt had a short period of relief. We then proceeded to increase our dose and to repeat the dose at definite and variable intervals. Patients observed that the drying effect upon the nose lasted from eight to twenty hours. The drying effect was apparently dependent upon the severity of the infection. In very severe infections cessation of exudation and relief lasts about ten hours. A second dose given in ten hours in severe cases prolonged the period of relief which the patient

had previously experienced. When some early cases were given sodium chloride and obtained relief for twenty hours and then medication was stopped, we observed that the coryza returned with about the same severity as in the instances of the untreated patients. We therefore concluded that the severity of an infection cannot be judged by the relief obtained from the first dose and that medication must be continued. After experimentation and observation we adopted a routine for our hospital. A daily dose is given for three days. It consists of 1 ounce of a saturated solution, approximately 10 Gm. of salt. The exceptional patient who wishes the best results, regardless of epigastric distress of short duration, should take a second dose ten to twelve hours after the first dose, a third dose in twenty-four hours, and a fourth dose in forty-eight hours. We have administered sodium chloride in 8 Gm. doses to children without untoward reactions and with excellent results. This form of therapy is not recommended routinely for undisciplined children because of the difficulty of administration and the fact that the child may not retain the medication.

We have observed that patients who failed to report for a second treatment became sick again on the third day and offered the explanation for failure to report that they thought they were cured. However, if one finds the improvement marked, the patient can then decrease the amount of the second dose, but should not omit it entirely. Patients who apparently have come down with a very severe acute coryza will still have some exudation during the first few days and on the fourth or fifth day the nasal discharge may become mucopurulent. In those instances we repeat one dose, and sometimes two doses, during the latter stage and have observed that recovery becomes very noticeable after the therapy. The most important recommendation we offer is that a cold must be treated at the earliest possible moment. If treatment is delayed it is still effective, but not so dramatic as if it had been administered early.

There are several comments relative to the administration of sodium chloride that are worthy of note.

Practically no incompatibilities arise from its use. However, the gastric mucosa in some persons is sensitively reactive, resulting in nausea or epigastric distress and even occasionally in vomiting. We have observed that the administration of sodium chloride one to two hours after meals markedly lessens any untoward gastric reactions. There is a severe thirst that follows salt ingestion and it is recommended that only small amounts of water be given merely to partially quench the thirst. For obvious reasons

salt is not recommended for patients who have frequent gastric complaints, and during the administration a patient should partake of a soft diet. All other reactions experienced are mild and transitory.

We were so impressed by the efficacy of this form of therapy that we adopted it routinely and then decided to make further studies and observations as the occasions arose. In our first study we attempted to have the patients compare the results of other treatments to the results obtained from salt therapy.

We observed that the memory of patients was too unreliable and such conclusions would therefore be inaccurate. In another instance we obtained cultures from the nose of patients before and after treatment and had a report of the number of colonies after the material was cultured. Although the results were favorable, they were not consistently so and therefore these results were discarded. It then became apparent to us that no matter how impartial one may be, a single study concerning the treatment of a cold can easily appear, on the surface, to be misleading. We made several attempts to inform our inmate population to report to "sick call" at the first signs of a cold. We observed that as a result of their indifference to the common cold they usually neglected to report for treatment until the second or third day of the cold. After we observed many such instances and accepted salt as good therapy in the early stages we then decided to treat all colds similarly and to record our treatments.

We felt that a study of several thousand cases over a period of years would provide more accurate information than the study of a single group, and for that reason we reviewed our hospital records for a period of four years.

There are several factors to be borne in mind in our study. We are dealing with an inmate population to whom routine is distasteful and "sick call" visits provide an opportunity to depart from routine. Therefore, a patient may come to "sick call" repeatedly for a cold. It has been our policy that a patient who claimed he still had a cold, in spite of salt treatment for three days, was hospitalized. Although this patient was not sick, he was included with the others who failed to respond to salt treatment.

As we have stated above, salt treatment is more effective if administered within the first few hours of onset of the cold. Patients who reported several days after the onset also received salt, and failures in treatment of this group were also included in the study. The patients' common explanation for failure to report early was that they "thought the cold would go away of its own accord." We conducted a study for one

TABLE I

Year	Type of Therapy	Number Treated	Number Hospitalized	Percentage of Group	Average Temperature
1940	Standard	550	13	2.36	100.2 F
	Salt	150	2	1.74	102 F
1941	Standard	162	13	8.02	99.6 F
	Salt	213	16	7.05	99.4 F
1942	Standard	103	3	2.94	99.4 F
	Salt	366	6	1.6	98.7 F
1943	Standard	557	8	1.4	98.9 F
	Salt				

month (March 2-April 2, 1943) on 37 men who complained of either a running nose or nasal stuffiness. They were treated with our routine salt therapy. Most of them had their illness twenty-four hours or less. In none of these patients was bed rest indicated within the five-day period after treatment had been instituted.

Analyzing our clinical records, which now contain considerable material, we have been able to come to some fairly clear cut conclusions. We studied our outpatient clinic records and compared them with our hospital records. We wanted to know how many men who received treatment for a cold were admitted to the hospital within four days after treatment had begun and how sick these patients were. A patient was routinely admitted to the hospital who had an oral temperature of 100 F or over at "sick call," or whose symptoms suggested gripe, or who claimed he had not improved after receiving ambulatory treatment.

We divided our patients into two groups. Those who received salt treatment were called the "salt group"; those who received accepted forms of treatment were called the "standard group."

To measure severity of infection we recorded the highest oral temperature during the hospital stay and in group studies used an average (see Table I).

We can view this study from another aspect. Of the men who received treatment and were admitted to the hospital, there were 29 who received standard treatment, 15 of that group had a temperature of 100 F or over. In the group of 32 who received salt treatment before admission, 9 had a temperature of 100 F or over. The average temperature of the entire standard treatment group was 100.05 F. The average temperature of the salt treatment group was 99.3 F. The average hospital stay of the standard group was 3.69 days. The average hospital stay of the salt group was 2.9 days. Thus, out of 1,686 who received salt, 32 were hospitalized—a percentage of 1.9. Of 415 standard-treated patients 29 were hospitalized—a percentage of 6.9.

A few observations and inferences of practical value can be drawn from our hospital study.

Patients who received salt treatment within the first twenty-four hours of the onset of the cold avoided hospitalization and thus avoided losing time from work. Second, those who received salt treatment more than twenty-four hours after onset of the infection had a milder illness and spent less time in the hospital as compared to the standard-treatment group.

In 1940, 95 men were admitted to the hospital. Their average high temperature in the hospital was 100.1 F. The salt treatment was begun in the late fall of 1940 and was routine for the first half of 1943. Fifty-one men were admitted to the hospital for the first half of 1943 and had an average high temperature of 99.3 F. This trend has been gradual since 1940 and may be an indication that improvement in cold treatment lowered the infectiousness of the organisms.

Progress is usually associated with experimentation. In spite of the fact that we felt we had a "promising" therapeutic agent at our disposal, we felt that there was still a great deal of room for improvement. It is generally accepted that heliotherapy is a valuable adjunct to the improvement of a patient's immunologic powers. We therefore decided to add heliotherapy to salt treatment. The subjective and objective results of ultraviolet therapy were such that we now feel that we have another valuable therapeutic agent in the treatment of common colds. We are, therefore, attempting to include ultraviolet therapy routinely in the treatment of colds; the only obstacle is the shortage of equipment as a result of the war. Incidentally, it has our experience that ultraviolet therapy is of value as a prophylactic agent.

For ultraviolet radiation we use a mercury vapor apparatus at a distance of 36 inches, allowing for three-minute exposure each to the front and back of the chest for the first treatment. We increase the time of exposure by one minute daily, naturally allowing for individual tolerance to ultraviolet.

In addition to salt, heliotherapy, and vaccines in certain selected cases, we use a nasal spray of sulfadiazine solution (Pickrell solution). This spray is not harmful to the nasal mucosa and, as reported by Turnbull and Dolowitz,<sup>26</sup> is helpful in combating the secondary invaders.

## Summary

The common cold is of tremendous importance clinically and economically. Outstanding factors that predominate as causes of the common cold are chilling, with its accompanying alteration of normal physiology, and bacterial and virus invasion. There are many forms of treatment

and recommendations, and the majority of them are either useless or harmful. Two notable exceptions are the use of vaccines in proper instances during the course of illness and the use of sulfadiazine solution spray.

Accumulated evidence sustains the contention that engorgement of the nasal tissues and the coryza syndrome that accompanies it account principally for the discomfort of the patient and for the failure of what has been accepted as standard treatment. It then follows that any treatment that tends to restore tissue to approximately its normal state should be the treatment of choice. We believe that the use of sodium chloride by mouth in the common cold is that type of treatment. Sodium chloride in large doses abruptly curtails marked serous exudation and thus contributes to the comfort of the patient, shortens the course, lessens the severity, markedly reduces absenteeism—all this in contrast to the simplicity of the medication.

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# CORRELATION OF PERITONEOSCOPIC FINDINGS WITH CLINICAL AND PATHOLOGIC FACTORS, ESPECIALLY OF THE LIVER

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WHEN Max Nitze, in 1877, first tried to introduce the cystoscope as a universal diagnostic method he was awarded with an abundance of adverse criticism and resistance. In fact, thirty years elapsed before cystoscopy was generally recognized, although the many technical objections had already been eliminated. Similarly, the procedure now known as peritoneoscopy was first reported in 1901 by Kelling of Dresden, who termed it *Zoelioskopie*, but more than thirty years elapsed before any real recognition was given to this procedure. Here, too, delay in acceptance was in part attributed to technical difficulties and objections which ultimately were overcome by Ruddock of California. But there still remain many who, without evaluation of the procedure, condemn it. Others who are not familiar with it accept it as a means of diagnosis when all other methods are of no avail. They subsequently condemn it for its shortcomings.

Those who are familiar with peritoneoscopy and have learned the scope of its usefulness by prolonged application and study are still enthusiastic and realize that except for laparotomy peritoneoscopy is the only procedure that provides a direct method of examining the peritoneal cavity and its contents.

It permits the experienced peritoneoscopist to inspect the presenting surfaces of the liver, gall-bladder, stomach, spleen, omentum, intestines, pelvic viscera, and parietal peritoneum. The peritoneoscopist has learned that the procedure is of no value if used indiscriminately, and should only be performed for a definite purpose. The error of accepting cases for diagnosis has undoubtedly led many to belittle the value of this procedure and to erroneously classify the procedure as unscientific. The limitations must be clearly understood, and, above all, the findings of a negative examination must be properly interpreted. If a specific request or purpose of examination is defined then the examination is justified. It will aid in either confirming a diagnosis or establishing a diagnosis.

To repeat, the value of peritoneoscopy is in direct proportion to a proper understanding of the limitations of peritoneoscopy. Since only the

anterior surfaces of the accessible viscera can be seen, no value can be given to the interpretation of lesions occurring in the posterior surface of organs. It certainly cannot be applied to lesions of organs which cannot be seen by the endoscope. The value of the examination depends entirely upon whether the organ in question is in the field of vision. Thus if a patient has ascitic fluid, with loss of weight and laboratory findings not particularly significant of hepatic disease, and peritoneoscopy is requested, the operator confines himself to visualization of the liver. If the structure appears normal, he can say the ascites is not due to cirrhosis and even if he goes no further he has accomplished his purpose and aided in the diagnosis. Should the liver appear cirrhotic, then he has given a positive finding. A negative finding does not necessarily rule out pathologic changes, but merely eliminates the organ in question.

A peritoneoscopy service was originally formed to study the problem of peritoneoscopy and its relation to a large general hospital such as we have at the Metropolitan and Flower-Fifth Avenue Hospitals. Since this organization was started the patients so examined now number 142. A review of the first 100 of these cases will form the basis of this report. These patients have been from the various services, but the majority have come to us from the so-called "study group" of the medical department and the remainder from the surgical service. Those cases presenting cirrhosis have been hospitalized for progressive studies, and whenever feasible have been maintained in the research group at the Metropolitan Hospital. This has permitted extensive investigation pertaining to hepatic disorders and associated laboratory data.

In an analysis of 100 cases (Table 1), 66 cases were encountered which were directly related to the gastrointestinal tract. Of these 54 were related to the liver. Let us first consider cirrhosis of the liver, of which 35 cases were encountered in this series.

Cirrhosis of the liver, particularly in the compensated stage, is exceedingly difficult to diagnose accurately. In many instances the disease is latent and unsuspected and frequently is accidentally recognized at the surgical table or at the postmortem examination. The disease is suspected when a diagnosis of alcoholism and multiple gastro-enterologic symptoms are obtained. But alcoholism may exist without cirrhosis of

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cal College and Flower and Fifth Avenue Hospitals and  
Metropolitan Hospital

TABLE 1.—CORRELATION OF PERITONEOSCOPIC FINDINGS WITH CLINICAL AND PATHOLOGIC FACTORS, ESPECIALLY OF THE LIVER

	Number of Cases
I. Liver disease	54
a. Cirrhosis	35
b. Secondary carcinoma	14
c. Miscellaneous	5
II. Gallbladder disease	5
a. Hydrops vesicae felleae	4
b. Primary carcinoma	1
III. Malignant disease	7
a. Stomach (metastases to liver and omentum)	5
b. Colon	2
IV. Miscellaneous diseases	34
a. Tuberculous peritonitis	10
b. Gynecologic	6
c. Unclassified	18

the liver, as cirrhosis of the liver may occur without a history of alcoholism. The disease is always suspected when an esophageal varix ruptures. Hematemesis is an initial symptom and practically diagnostic, but is not an early symptom. It is usually followed by the stage of decompensation accompanied by jaundice or ascites.

As a rule, cirrhosis of the liver is more easily detected during the stage of decompensation or phase of ascites, but here, too, difficulty in diagnosis is encountered. Palpation of the liver as an aid in diagnosis has been pointed out by many workers to be unreliable. We have had the experience of checking the bedside opinion of competent observers with endoscopic study and too frequently have been unable to visualize the so-called "nodular or granular" feel of the liver or the "enlarged liver 4 to 5 fingerbreadths below the costal margin." Our findings have been confirmed by subsequent laparotomy and necropsy in a large percentage of our cases.

Even the presence or absence of ascitic fluid may be of little aid to the clinician. If present it may merely confuse the picture. It is not uncommon for us to peritoneoscope a patient and withdraw 2,000 cc. of fluid which had not been on the records prior to peritoneoscopy.

In view of the many shortcomings in clinical diagnosis of cirrhosis of the liver, peritoneoscopy offers an easy and direct method of examining the liver for diagnosis. By this method direct endoscopic visualization of the liver is possible, and in the hands of the trained observer a definite diagnosis can always be made in the portal type of cirrhosis. In many cases of ascites or hepatomegaly of unknown origin it is the only diagnostic method other than laparotomy.

The next entity which I will discuss is carcinoma of the liver. The occurrence of cirrhosis of the liver as an associated lesion of primary car-

cinoma of the liver has been emphasized by many writers on this subject. In our series we found no such correlation and only encountered 15 cases of carcinoma, all secondary to a lesion elsewhere in the body. Secondary carcinoma of the liver is relatively common, being twenty times as prevalent as primary carcinoma of the liver. As a rule, the disease may be suspected when there is a rapid increase in liver size, a nodular surface, local tenderness, and extreme cachexia. Since the symptoms are frequently identical with those of cirrhosis of the liver, it is often difficult to clinically differentiate the disorders unless the primary site has been determined and metastasis is suspected. In this respect it should be remembered that in approximately one-half the cases of metastatic carcinoma of the liver the primary site cannot be determined during life. The peritoneoscopist can distinguish between cirrhosis and malignancy, and in the latter group can frequently determine the site by biopsy studies, which obviates the necessity of exploratory laparotomy.

Another interesting entity is primary carcinoma of the gallbladder. Like primary carcinoma of the liver, it is not so common as secondary malignancies and is extremely difficult to diagnose clinically. It is generally associated with gallstones and is more common in females than in males. Because of difficulty in diagnosis it is probable that it is more prevalent than available statistics, which place it as occurring in 3 to 5 per cent of all cancers, show. Here peritoneoscopy is offered as a further aid in diagnosis, since laboratory tests are of no avail and only in occasional instances will roentgenographic studies suggest the diagnosis. In our series one case of primary carcinoma of the gallbladder was encountered.

### Summary

To summarize: I would like to leave the following impressions concerning the use of the peritoneoscope and its use as it concerns diseases of the liver and gallbladder.

1. The peritoneoscope has specific indications for its use. The indications previously expressed are definite and in some cases offer the only means other than exploratory laparotomy for diagnosis.

2. The diagnosis of portal cirrhosis which so frequently cannot be accurately determined can be made with 100 per cent accuracy by the peritoneoscope. In other hepatic disorders the endoscopic impression may confirm or establish a diagnosis.

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## BASIC CONCEPTS OF ALCOHOLICS ANONYMOUS

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**A**LCOHOLICS Anonymous is an informal fellowship of about 12,000 formerly alcoholic men and women who are to be found banded together as groups in about three hundred and twenty-five American and Canadian communities, these groups ranging in size from half a dozen to many hundreds of individuals. Our oldest members have been sober for from eight to nearly ten years. Of those sincerely willing to stop drinking about 50 per cent have done so at once, 25 per cent after a few relapses, and most of the remainder have improved. It is probable that half of our members, had they not been drinkers, would have appeared in ordinary life to be normal people. The other half would have appeared as more or less pronounced neurotic.

Alcoholics Anonymous, or "AA," popularly so-called, has but one purpose—one objective only—"To help other alcoholics to recover from their illness."

Nothing is asked of the alcoholic approaching us save a desire on his part to get well. He subscribes to no membership requirements, no fees or dues, nor is a belief in any particular point of view, medical or religious, demanded of him. As a group we take no position on any controversial question. Emphatically, we are not evangelists or reformers. Being alcoholics who have recovered, we aim to help only those who want to get well. We do this because we have found that working with other alcoholics plays such a vital part in keeping us all sober.

You may inquire "Just how does AA work?" I cannot fully answer that question. Many AA techniques have been adopted after a ten-year process of trial and error which has led to some interesting results. But as laymen we doubt our own ability to explain them. We can only tell you what we do, and what seems, from our point of view, to happen to us.

At the very outset we should like it made ever so clear that AA is a synthetic concept—a synthetic gadget, as it were, drawing upon the resources of medicine, psychiatry, religion, and our own experience of drinking and recovery. You will search in vain for a single new fundamental. We have merely streamlined old and proved principles of psychiatry and religion into such forms that the alcoholic will accept them. And then we have created a society of his own

kind where he can enthusiastically put these very principles to work on himself and other sufferers.

Then, too, we have tried hard to capitalize our one great natural advantage. That advantage is, of course, our personal experience as drinkers who have recovered. How often the doctors and clergymen throw up their hands when, after exhaustive treatment or exhortation, the alcoholic still insists, "But you don't understand me. You never did any serious drinking yourself, so how can you? Neither can you show me many who have recovered."

Now, when one alcoholic who has got well talks to another who hasn't, such objections seldom arise, for the new man sees in a few minutes that he is talking to a kindred spirit, one who understands. Neither can the recovered AA member be deceived, for he knows every trick, every rationalization of the drinking game. So the usual barriers go down with a crash. Mutual confidence, that indispensable of all therapy, follows as surely as day does night. And if this absolutely necessary rapport is not forthcoming at once it is almost certain to develop when the new man has met other AA's. Someone will, as we say, "click with him."

As soon as that happens we have a good chance of selling our prospect those very essentials which you doctors have so long advocated, and the problem drinker finds our society a congenial place to work them out for himself and his fellow alcoholic. For the first time in years he thinks himself understood and he feels useful, uniquely useful, indeed, as he takes his own turn promoting the recovery of others. No matter what the outer world still thinks of him, he now knows that he can get well, for he stands in the midst of scores of cases worse than his own who have attained the goal. And there are other cases precisely like his own—a pressure of testimony which usually overwhelms him. If he doesn't succumb at once, he will almost surely do so later when barleycorn builds a still hotter fire under him, thus blocking off all his other carefully planned exits from dilemma. The speaker recalls seventy-five failures during the first three years of AA—people we utterly gave up. During the past seven years sixty-two of these people have returned to us, most of them now making good. They tell us they returned because they knew they would die or go mad if they didn't. Having tried everything else within their means and having exhausted their pet rationalizations, they came back and

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 3, 1944.

\* One of the originators of Alcoholics Anonymous.

took their medicine. That is why we never need to evangelize alcoholics. If still in their right minds they come back, once they have been well exposed to AA.

Now to recapitulate. Alcoholics Anonymous has made two major contributions to the program of psychiatry and religion. These are, it seems to us, the long-missing links in the chain of recovery:

1. Our ability, as ex-drinkers, to secure the confidence of the new man—to "build a transmission line into him."
2. The provision of an understanding society of ex-drinkers in which the newcomer can successfully apply the principles of medicine and religion to himself and others.

So far as we AA's are concerned, these principles, now used by us every day, seem to be in surprising agreement. Let's compare briefly what in a general way medicine and religion tell the alcoholic:

#### Medicine Says

1. The alcoholic needs a personality change.
2. The patient ought to be analyzed and should make a full and honest mental catharsis.
3. Serious personality defects must be cured through accurate self-knowledge and realistic readjustment to life.
4. The alcoholic neurotic retreats from life, is a picture of anxiety and abnormal self concern; he withdraws from the "herd."
5. The alcoholic must find "a new compelling interest in life," must "get back into the herd." He should find an interesting occupation, should join clubs, social activities, political parties, or discover hobbies to take the place of alcohol.

#### Religion Says

1. The alcoholic needs a change of heart, a spiritual awakening.
2. The alcoholic should make examination of the "conscience" and a confession—or a moral inventory and a frank discussion.
3. Character defects (sins) can be eliminated by acquiring more honesty, humility, unselfishness, tolerance, generosity, love, etc.
4. The alcoholic's basic trouble is self-centeredness. Filled with fear and self-seeking, he has forgotten the brotherhood of man.
5. The alcoholic should learn the "expulsive power of a new affection," love of serving man, of serving God. He must "lose his life to find it"; he should join the church and there find self-forgetfulness in service. For "faith without works is dead."

Thus far, religion and medicine are seen in hearty accord. But in one respect they do differ. When the doctor has shown the alcoholic his underlying difficulties and has prescribed a program of readjustment, he says to him, "Now that you understand what is required for recovery,

you should no longer depend on me. You must depend upon yourself. *You go do it.*"

Clearly, then, the object of the doctor is to make the patient self-sufficient and largely, if not wholly, dependent upon himself.

Religion does not attempt this. It says that *faith in self is not enough*, even for a nonalcoholic. The clergyman says that we shall have to find and depend upon a higher power—God. He advises prayer and frankly recommends an attitude of unwavering reliance upon Him who presides over all. By this means we discover a strength much beyond our own resources.

So, the main difference seems to add up to this: Medicine says, "Know yourself, be strong, and you will be able to face life." Religion says, "Know thyself, ask God for power, and you become truly free."

In Alcoholics Anonymous the new man may try either method. He sometimes eliminates "the spiritual angle" from "Twelve Steps to Recovery" and wholly relies upon honesty, tolerance, and "working with others." But it is curious and interesting to note that faith always comes to those who try this simple approach *with an open mind*—and in the meantime they stay sober.

If, however, the spiritual content of the "Twelve Steps" is actively denied, they can seldom remain dry. That is our AA experience everywhere. We stress the spiritual simply because thousands of us have found we can't do without it.

At this point I should like to state the "Twelve Steps" of the Alcoholics Anonymous Program of Recovery so that you physicians may accurately compare your methods with ours.

#### The Twelve Steps

1. We admitted we were powerless over alcohol—that our lives had become unmanageable.
2. Came to believe that a power greater than ourselves could restore us to sanity.
3. Made a decision to turn our will and our lives over to the care of God as we understood him.
4. Made a searching and fearless moral inventory of ourselves.
5. Admitted to God, to ourselves, and to another human being the exact nature of our wrongs.
6. Were entirely ready to have God remove all these defects of character.
7. Humbly asked Him to remove our shortcomings.
8. Made a list of all persons we had harmed, and became willing to make amends to them all.
9. Made direct amends to such people wher-



ever possible, except when to do so would injure them or others

10 Continued to take personal inventory and when we were wrong promptly admitted it

11 Sought, through prayer and meditation, to improve our conscious contact with God as we understood Him, praying only for knowledge of His will for us and the power to carry that out

12 Having had a spiritual experience as the result of these steps, we tried to carry this message to alcoholics, and to practice these principles in all our affairs

Boiled down, these steps mean, simply (1) admission of alcoholism, (2) personality analysis and catharsis, (3) adjustment of personal relations, (4) dependence upon some higher power, and (5) working with other alcoholics

Most strongly we point out that adherence to these principles is not a condition of AA membership. Any alcoholic who admits he has a problem is an AA member regardless of how much he disagrees with the program. Based upon our experience, the whole program is a suggestion only. The alcoholic, objecting at first to the spiritual factor, is urged to keep an open mind, meanwhile treating his own AA group as "a power greater than himself." Under these conditions the newcomer commences to undergo a personality change at such a rate and of such dimensions that he cannot fully account for it on the basis of self-realization and self discipline. Not only does his alcoholic obsession disappear but he finds himself progressively free of fear, resentment, and inferiority. These changes seem to have come about almost automatically. Hence he concludes that "A power greater than himself" must indeed have been at work. Having come to this point, he begins to form his own concept of God. He then develops confidence in that concept, which grows as he gets proof in everyday life that his new faith actually works, really produces results.

This is what most AA's are trying to say when they talk about a spiritual experience. They mean a certain quality of personality change which, in their belief, could not have occurred without the help and presence of the creative spirit of the universe.

With the average AA many months may elapse before he is aware of faith in the spiritual sense. Yet I know scarcely an AA member of more than a year's standing who still thinks his transformation wholly a psychologic phenomenon based entirely upon his own normal resources. Almost everyone of our members will tell you that, while he may not go along with a clergyman's concept of God, he has developed one of his own on which he can positively depend—one which works for him.

We AA's are quite indifferent to what people may call this spiritual experience of ours. But to us it looks very much like conversion, the very thing most alcoholics have sworn they never would have. In fact I am beginning to believe that we shall have to call it just that, for I know our good friend, Dr. Harry Tiebout, is sitting here in this room. As you may know, he is the psychiatrist who recently told his own professional Society, The American Psychiatric Association, that what we AA's get is conversion—sure enough and no fooling! And if the spirit of that great psychologist, William James, could be consulted, he'd doubtless refer us to his famous book, *Varieties of Religious Experience* in which personality change through the "educational variety of spiritual experience, or conversion" is so ably explored. Whatever this mysterious process is, it certainly seems to work, and with us who are on the way to the asylum or the undertaker anything that works looks very, very good indeed.

And I'm very happy to say that many other distinguished members of your profession have pronounced our twelve steps good medicine. Clergymen of all denominations say they are good religion, and of course we AA's like them because they do work. Most ardently we hope that every physician here today will find himself able to share this happy agreement. In the early years of AA, it seemed to us alcoholics that we wandered in a sort of no-man's land which appeared to divide science and religion. But all that has changed since AA has now become a common meeting ground for both concepts.

Yes, Alcoholics Anonymous is a cooperative venture. All cases requiring physical treatment are referred to you physicians. We frequently work with the psychiatrist and often find that he can do and say things to a patient which we cannot. He, in turn, avails himself of the fact that as ex-alcoholics we can sometimes walk in where he fears to tread. Throughout the country we are in daily touch with hospitals and sanitariums, both public and private. The enthusiastic support given us by so many of your noted institutions is something for which we are deeply grateful. The opportunity to work with alcoholics means everything, to most of us it means life itself. Without the chance to forget our own troubles by helping others out of theirs, we would certainly perish. That is the heart of AA—it is our lifeblood.

We have torn still other pages from the Book of Medicine, putting them to practical use. It is from you gentlemen we learn that alcoholism is a complex malady, that abnormal drinking is but a symptom of personal maladjustment to life, that, as a class, we alcoholics are apt to be

sensitive, emotionally immature, grandiose in our demands upon ourselves and others; that we have usually "gone broke" on some dream ideal of perfection; that, failing to realize the dream, we sensitive folk escape cold reality by taking to the bottle; that this habit of escape finally turns into an obsession, or, as you gentlemen put it, a compulsion to drink so subtly powerful that no disaster, however great, even near death or insanity, can, in most cases, seem to break it; that we are the victims of the age-old alcoholic dilemma: our obsession guarantees that we shall go on drinking, but our increasing physical sensitivity guarantees that we shall go insane or die if we do.

When these facts, coming from the mouths of you gentlemen of science, are poured by an AA member into the person of another alcoholic they strike deep—the effect is shattering. That inflated ego, those elaborate rationalizations by which our neurotic friend has been trying to erect self-sufficiency on a foundation of inferiority, begin to ooze out of him. Sometimes his deflation is like the collapse of a toy balloon at the approach of a hot poker. But deflation is just what we AA's are looking for. It is our universal experience that unless we can start deflation, and so self-realization, we get nowhere at all. The more utterly we can smash the delusion that the alcoholic can get over alcoholism "on his own," or that someday he may be able to drink like a gentleman, the more successful we are bound to be.

In fact, we aim to produce a crisis, to cause him to "hit bottom," as AA's say. Of course you will understand that this is all done by indirection. We never pronounce sentences, nor do we tell any alcoholic what he *must* do. We don't even tell him he is an alcoholic. Relating the seriousness of our own cases, we leave him to draw his own conclusions. But once he has accepted the fact that he *is* an alcoholic and the further fact that he is powerless to recover unaided, the battle is half won. As the AA's have it, "he is hooked." He is caught as if in a psychological vise.

If the jaws of it do not grip him tightly enough at first, more drinking will almost invariably turn up the screw to the point where he will cry "Enough!" Then, as we say, he is "softened up." This reduces him to a state of complete dependence on whatever or whoever can stop his drinking. He is in exactly the same mental fix as the cancer patient who becomes dependent, abjectly dependent, if you will, on what you men of science can do for cancer. Better still, he becomes "sweetly reasonable," truly open-minded, as only the dying can.

Under these conditions, accepting the spiritual

implications of the AA program presents no difficulty even to the sophisticate. About half the AA members were once agnostics or athiests. This dispells the notion that we are only effective with the religiously susceptible. You remember the now famous remark, "There are no athiests in the foxholes." So it is with most alcoholics. Bring them within range of the AA and "block-busters" will soon land near enough to start radical changes in outlook, attitude, and personality.

These are some of the basic factors which perhaps partly account for such success as we have had. I wish time permitted me to give you an intimate glimpse of our life together, of our meetings, of our social side, of those fast friendships unlike any we had known before, of our participation by thousands in the war effort and the armed services, where so many AA's are discovering that they can face up to reality—no longer institutionalized, even within an AA Group. We have all found that God can be relied upon both in Alaska and India, that strength can come out of weakness, that perhaps only those who have tasted the fruits of reliance upon a higher power can fully understand the true meaning of personal liberty, freedom of the human spirit.

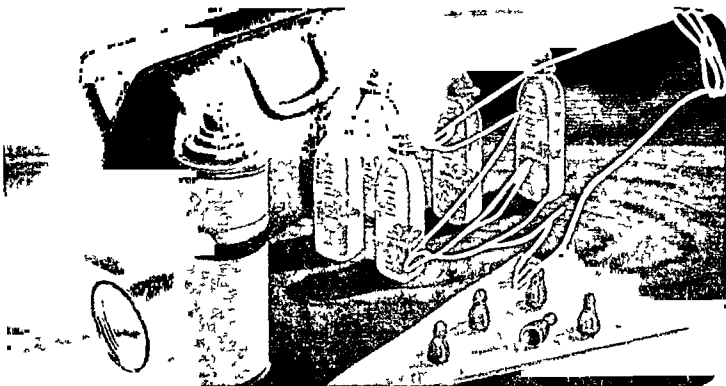
Surely, you who are here this morning must realize how much we AA's are beholden to you, how much we have borrowed from you, how much we still depend upon you. For you have supplied us ammunition which we have used as your lay assistants—gun pointers for your artillery. I have put out for inspection our version of the factors which bring about personality change, our method of analysis, catharsis, and adjustment. I have tried to show you a little of our great new compelling interest in life—this society where men and women understand each other, where the clamors of self are lost in our great common objective, where we can learn enough of patience, tolerance, honesty, humility, and service to subdue our former masters—insecurity, resentment, and unsatisfied dreams of power.

But I must not close without paying tribute to our partner, Religion. Like Medicine, it is indispensable. At this temple of science I hope none will take it amiss if I give Religion the last word:

"God grant us the serenity to accept the things we cannot change, courage to change the things we can, and wisdom to know the difference."

Please address inquiries and requests for AA literature to The Alcoholic Foundation, Box 459, Grand Central Annex, New York 17, New York.

[Continued on page 1810]



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[Continued from page 1808]

## Discussion

**Dr. G. Kirby Collier, Rochester.**—Realizing how ineffectual our efforts in the treatment of the chronic alcoholic through the usually accepted psychiatric procedures were was my reason for investigating Alcoholics Anonymous. With one of their members I was privileged to attend a meeting in New York and had the opportunity of discussing their philosophy with Mr. Wilson. First, I was impressed with the honesty and sincerity of those members I met, and, second, with the broad socioreligious background and its psychiatric implications—chiefly man's recognition of self, his abilities as well as his inefficiencies, and that intangible power which all mankind recognizes, whether he acknowledges it or not. Upon my return home, I asked three chronic alcoholics, all of twenty to twenty-five years' duration, to organize as a group, after going over the situation with them as I understood it. These three contacted others and held their first meeting in the small apartment of one. Growing, they approached me as to a place for meeting. We eliminated the Y.M.C.A., Public Library, church halls, or parish houses for obvious reasons, and at last advised a room in one of our large centrally located hotels. This has worked out nicely and meetings are held each Sunday afternoon and Wednesday evening. From the original group of three, contacts have been made with over 500, of whom 60 per cent are active members, having been free from indulgence in alcohol for one to two years.

In our city we have had a Council on Alcohol for about three years. The group consists of psychiatrists, social workers, and others, who meet each month for discussion. At two of these meetings members of AA have spoken, and, as a result, two members of AA are now members of this Council. Members of AA are frequently called upon to address various groups, and it is most interesting to hear of men who have never spoken in public before being willing to get up and talk before any group. In Rochester they have become especially interested in meeting with youth groups. I might say that I have attended but few meetings of the Rochester group and these only at their invitation. I have felt that AA is a group unto themselves and their best results can be had under their own guidance, as a result of their philosophy. Any therapeutic or philosophic procedure which can prove a recovery rate of 50 to 60 per cent must merit our consideration. As stated by Tiebout in a paper read at Detroit, Michigan, before the American Psychiatric Association in May, 1943, "It is highly imperative for us, as presumably open-minded scientists, to view wisely and long the efforts of others in our field of work. We may be wearing bigger blinders than we know."

**Dr. Foster Kennedy, New York City.**—We have heard a truly moving and eloquent address, moving in its form and in its facts.

I have no doubt that a man who has cured himself of the lust for alcohol has a far greater power for curing alcoholism than has a doctor who has never been afflicted by the same curse. No matter

how sympathetic and patient the doctor may be in the approach to his patient, the patient is sure either to feel, or to imagine, condescension to himself, or to get the notion that he is being hectored by one of the minor prophets.

This organization of Alcoholics Anonymous calls on two of the greatest reservoirs of power known to man—religion and that instinct for association with one's fellows which Trotter has called the "herd instinct." Religious faith has been described by Matthew Arnold as a convinced belief in a power greater than ourselves that makes for righteousness, and a sense of helpfulness from this can be acquired through a kind of spiritual conversion which might well be called a variety of religious experience.

The sick man's association with those who, having been sick, have become or are becoming well, is a therapeutic suggestion of cure and an obliteration of his feeling of being, in society, a pariah; and this tapping of deep internal forces is shown by the great growth of this sturdy and beneficent movement. Furthermore, this movement furnishes an objective of high emotional driving power in making every cured drunkard a missionary to the sick.

We physicians, I think, have always had difficulty in finding an occupation for our convalescent patients of sufficient emotional driving power to replace the psychic results of the alcohol that has been withdrawn. These men grow filled with a holy zeal, and the very zealousness keeps the missionary steady while the next man is being cured.

I think our profession must take appreciative cognizance of this great therapeutic weapon. If we do not do so, we shall stand convicted of emotional sterility and of having lost the faith that moves mountains, without which medicine can do little.

**Dr. Harry M. Tiebout, Greenwich, Connecticut.**—My first contact with AA began five years ago when a patient with whom I had been working for well over a year came under the influence of AA and within a relatively short time dried up and for at least four years has remained completely dry. At that time I was puzzled and a little indignant that my best efforts had failed but AA had worked; but I kept sending patients, and now the situation has reversed. I get puzzled and a little indignant when AA doesn't work.

As a psychiatrist, I have had to think about the relationship of my specialty to AA and I have come to the conclusion that our particular function can very often lie in preparing the way for the patient to accept any sort of treatment or outside help. I now conceive the psychiatrist's job to be the task of breaking down the inner resistance so that which is inside will flower, as under the activity of the AA program.

In this respect I should like to point out that the same flowering can take place with patients who are not alcoholics, and I should like at this time to record my indebtedness to Mr. Wilson and AA for the understanding which has made by own therapeutic practice a more intelligent and meaningful process in so far as my own attitude is concerned. I now have more faith in the patient's own inner resources.



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# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman (428 Greenwood Place, Syracuse); George Baehr, M.D., and Charles D. Post, M.D.*

## Teaching Day on Poliomyelitis in Buffalo

A TEACHING day on poliomyelitis was held in the Hotel Statler in Buffalo on August 3. The afternoon meeting, held at 4:00 P.M., was intended for the physicians of Region 12, comprising Cattaraugus, Chautauqua, Erie, Genesee, Niagara, and Wyoming counties. The meeting was called to order by Dr. John D. Naples, president of the Medical Society of the County of Erie. The chairman of the meeting was Dr. A. Wilmot Jacobsen, acting regional chairman in pediatrics.

"Clinical Features of Poliomyelitis—Pathology, Diagnosis, and General Treatment" was the title of the lecture given by Dr. James L. Wilson, professor of pediatrics and director of the department of pediatrics at New York University College of Medicine.

Following this lecture Dr. Kristian G. Hansson, assistant professor of clinical surgery (orthopaedics) at Cornell University Medical College, spoke on "Physical Therapy in the Acute and

Convalescent Stages." General discussion followed the lectures.

The evening meeting was public and also took place at the Hotel Statler, at 8:00 P.M. Dr. Frank N. Potts, professor and head of the department of orthopaedic surgery at the University of Buffalo School of Medicine, was chairman of the meeting. Dr. James E. Perkins, Director of the Division of Communicable Diseases of the State Department of Health, spoke on "Epidemiology of Poliomyelitis."

The program was presented under the auspices of the Woman's Auxiliary to the Medical Society of the County of Erie, the medical societies of the counties of Cattaraugus, Chautauqua, Erie, Genesee, Niagara, and Wyoming, the Medical Society of the State of New York, the New York State Department of Health, and the Buffalo and Erie County Chapter of the National Foundation for Infantile Paralysis.

## Madison County Society Hears "Penicillin Therapy"

A SINGLE lecture entitled "Penicillin Therapy" was given before the Madison County Medical Society on August 10 at 6:30 P.M., at the summer home of Dr. Howard Beach at Sylvan Beach, New York.

The speaker was Dr. Paul C. Clark, assistant

professor of clinical medicine at Syracuse University College of Medicine.

This instruction was presented as a joint endeavor of the Medical Society of the State of New York and the New York State Department of Health.

## Instruction in Tropical Diseases for St. Lawrence County

A LECTURE, "Tropical Medicine," will be given before the St. Lawrence County Medical Society on August 17, at 12:30 P.M., at the Gouverneur Country Club in Gouverneur.

Dr. O. D. Chapman, professor of bacteriology and parasitology at Syracuse University College of

Medicine, will speak and will illustrate his lecture with colored films.

This instruction will be presented as a cooperative endeavor between the Medical Society of the State of New York and the New York State Department of Health.

## ISONIPECAINE OR DEMEROL NOW SUBJECT TO NARCOTIC LAW

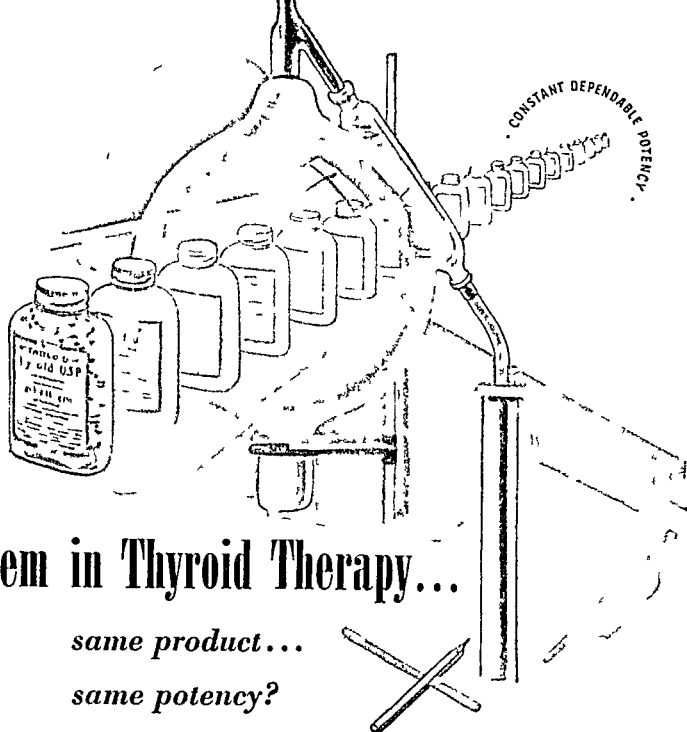
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## Amendments to State Sanitary Code and Recommendations of Advisory Group on Poliomyelitis

AT A MEETING held on June 7, the Advisory Group on Poliomyelitis to the New York State Department of Health and the New York City Department of Health carefully reviewed all available evidence and agreed unanimously to the following:

1. That all patients in whom a diagnosis of anterior poliomyelitis is suspected should be cared for in a hospital and that these patients may be safely admitted to the general wards but that it might be desirable to separate the patients in special wards for ease in handling.

2. That it be recommended to the Public Health Council of New York State and the Board of Health of New York City that quarantine procedures in hospitals be eliminated but that concurrent disinfection of all excretions be continued.

3. That all patients should be treated whenever possible under the combined supervision of the pediatrician, orthopaedic surgeon, and specialist in physical medicine, and that during the acute stage the patient should be kept at complete rest and disturbed as little as possible; that during the acute stage the therapeutic value of hot moist packs (or if not available, other methods of applying heat) is recognized as of great value for the general comfort of the patient in the elimination of pain and soreness where they occur, whether these occur at rest or on movement; that splints should not be used in the acute stage of the disease except in specific instances as determined by an orthopaedic surgeon.

4. A complete physical examination should be made to determine the residual muscle weakness or paralysis as soon as the patient's general condition permits and local muscle pain or soreness has subsided. If muscle weakness or paralysis is present, re-examination is indicated at intervals of one to two weeks depending upon the severity. If there is no impairment in muscle strength within two weeks after onset, gradual increase in the patient's activity may be permitted under careful supervision.

One month after discharge from the hospital the

absence of muscle weakness should be verified by re-examination. The after-care of patients with muscle weakness or paralysis should be determined after joint observation by the specialists concerned.

The Advisory Group includes the following members: Dr. Alan DeForest Smith, professor of orthopaedic surgery, College of Physicians and Surgeons, Columbia University; Dr. Philip Duncan Wilson, chief orthopaedist, Hospital of Special Surgery, New York City; Dr. William Benham Snow, associate professor of medicine, College of Physicians and Surgeons, Columbia University; Dr. James L. Wilson, professor of pediatrics, New York University; Dr. R. Plato Schwartz, associate professor of orthopaedic surgery, University of Rochester; Dr. Kristian G. Hansson, chief of physiotherapy, Hospital for Special Surgery, New York City.

The sulfonamide drugs have been remarkably effective in curing illness due to infection with meningococcus and in promptly eliminating the inciting micro-organism from the nose and throat secretions. Isolation of the patient after he has recovered and quarantine of household contacts have not

been shown to be of sufficient value in control of the disease to warrant the inconvenience to the patient and his family. Likewise, isolation of the patient after recovery and quarantine of the household contacts have been ineffective in the control of poliomyelitis, in which the epidemiology is similar.

Immediate isolation of every patient who presents evidence of acute illness, regardless of its nature and before as well as after diagnosis is made, would be of greater value in the prevention of spread of most communicable disease.

The Public Health Council, at its meeting on June 27, amended Chapter II, Regulations 15 and 17, of the Sanitary Code on the basis of the foregoing considerations. Essentially identical changes were made July 11 by the New York City Board of Health in the city Code.

Chapter II, Regulation 28, relating to the confi-

### National Farm Safety Week

By the President of the United States of America  
A Proclamation

WHEREAS, it behooves this Nation gratefully to acknowledge its special dependence upon the skill and labor of its farmers in the gigantic task of waging war; and

WHEREAS, the loss of life and limb by accident among our farming population has already reached an appalling figure, and the risks have lately been increased by longer hours of work and consequent fatigue; and

WHEREAS, it is essential to our war effort that this waste of vital farm power be minimized in every possible way:

Now, therefore, I, Franklin D. Roosevelt, President of the United States of America, do hereby call upon the Nation to observe the week commencing July 23, 1944, as National Farm Safety Week. And I request all persons and organizations concerned with agriculture and farm life to unite in an effort, during this National Farm Safety Week, to stimulate among farmers a full realization of the need for constant attention to the old and familiar precautions against the hazards of their calling, and also to awaken in them a sense of responsibility for the proper instruction in rules of safety of the many young and inexperienced persons now being employed on farms in all parts of the country.

In witness whereof, I have hereunto set my hand and caused the seal of the United States of America to be affixed.

Done at the City of Washington this sixteenth day of June, in the year of our Lord nineteen hundred and forty-four, and of the Independence of the United States of America the one hundred and sixty-eighth.

(Signed) FRANKLIN D. ROOSEVELT

By the President:

(Signed) CORDELL HULL, Secretary of State

[Continued on page 1816]



# SOPRONOL *Inhibits* FUNGOUS INFECTIONS



MONILIA  
albicans



EPIDERMOPHYTON  
inguinale



MICROSPORUM  
audouinii



TRICHOPHYTON  
purpureum

... As demonstrated by clinical investigation  
in a leading United States hospital

In tests on a large number of hospital patients, Sopronol was found to exert an *inhibitory* rather than a destructive action on the fungus. The advantages of this method are obvious. Sopronol, taken readily into the fungous organism, prevents its development and spread. Hence the infection is quickly brought to an end, but without the customary skin irritation caused by poisonous by-products resulting from strong fungicides in contact with the mold. The chemical basis of Sopronol is sodium propionate.

## ALL SUPERFICIAL MYCOSES (RINGWORM)

Prescribe Sopronol for: Tinea Pedis, Tinea Cruris, Tinea Capitis, Tinea Glabrosa, due to "the dermatophytes"—Trichophyton, Epidermophyton, Microsporum, Monilia (Candida) and pathogenic aspergillae infections. Sopronol is non-irritating, non-keratolytic, non-toxic.

Available in alcoholic solution, powder  
and water soluble ointment bases



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[Continued from page 1814]

dential nature of tuberculosis reports, was also amended.

The amended regulations, effective July 15, 1944, are reproduced below.

## CHAPTER II

### Communicable Diseases

Regulation 15. Persons suffering from chickenpox, bacillary dysentery, measles,\* *meningococcus meningitis* or *meningococcemia* (septicemia), ophthalmia neonatorum, pneumonia, poliomyelitis, epidemic or streptococcus (septic) sore throat, typhoid and paratyphoid fever to be isolated. Whenever a case of one of the diseases mentioned in this regulation comes to the attention of the health officer, he shall establish and maintain isolation of such case for the period specified herein; when isolation on the premises is impracticable, the health officer may cause the removal of the patient to a suitable hospital.

Chickenpox: until recovery.

Measles: until recovery.

*Meningococcus meningitis* or *meningococcemia* (septicemia): until end of the febrile stage.

Ophthalmia neonatorum: until two successive specimens of the discharges obtained from each eye, taken at intervals of not less than forty-eight hours, shall have been found free from gonococci or other causative micro-organisms in an approved laboratory.

Pneumonia: until recovery.

Poliomyelitis: until end of the febrile stage.

Epidemic or streptococcus (septic) sore throat: until recovery.

Typhoid fever: for ten days after clinical recovery from the disease. After the termination of such period of isolation such patient shall conform to the regulations for the control of typhoid carriers until two successive specimens of feces passed not less than three weeks after the date of onset and at an interval of not less than five days shall have been examined in an approved laboratory and found to be free from typhoid bacilli; a person who has recovered from typhoid fever shall not engage in the handling of milk, dairy products, or other foods until all secondary or complicating infections incited by the agents of this disease have disappeared and until four successive specimens of the intestinal discharges and urine of the person passed not less than three weeks after the date of onset and at intervals of not less than five days have been examined in an approved laboratory and found to be free from typhoid bacilli; provided that any person in whose feces or urine typhoid bacilli are present one year after such person has recovered from typhoid fever shall be released from the restrictions for typhoid carriers only with the approval of the state commissioner of health.

Paratyphoid fever: for five days after clinical recovery from the disease, except that no person shall engage in the handling of milk, dairy products, or other foods until clinical recovery and until four successive specimens of intestinal discharges and urine, passed not less than one week after the date of onset and at intervals of not less than five days shall have been examined in an approved laboratory and no paratyphoid bacilli shall have been found.

Bacillary dysentery: for five days after clinical recovery from the disease, except that no person shall engage in the handling of milk, dairy products, or other foods until clinical recovery and until four successive specimens of intestinal discharges passed not less than one week after the date of onset and at intervals of not less than twenty-four hours shall have been examined in an approved laboratory and found to be free from organisms of the dysentery group.

This amendment shall take effect July 15, 1944.

Regulation 17. Diphtheria, [meningococcus meningitis or meningococcemia (septicemia), poliomyelitis] and scarlet fever. Isolation of case, quarantine of children of household, and modified quarantine for adult household contacts.

\* Matter in italics is new; matter in brackets is deleted.

Whenever a case of one of the diseases mentioned in this regulation shall come to the attention of the health officer, he shall isolate the patient and establish and maintain quarantine for the periods hereinafter stated, provided, however, [that adult household contacts to a case of poliomyelitis, meningococcus meningitis, or meningococcemia (septicemia), shall not be quarantined and] that if a case of diphtheria or scarlet fever is properly isolated on the premises, quarantine shall be so modified as to permit adult household contacts who show no evidence of infection and will not be subsequently exposed to the patient or his secretions or excretions to follow any vocation which does not involve the handling of food or close association with children. When isolation on the premises is impracticable, the health officer may cause the removal of the patient to a suitable hospital.

Diphtheria: isolation until two successive cultures taken from the nose and throat at intervals of not less than twenty-four hours have been found free from diphtheria bacilli in an approved laboratory, the first of such cultures being taken not less than one week from the day of the onset of the disease; except that if diphtheria bacilli continue to be present in cultures after five weeks from the date of taking the first release culture, the health officer, in his discretion, may declare the person to be a diphtheria carrier.

Personal quarantine of household contacts, except as otherwise provided herein, until cultures taken from both nose and throat subsequent to last exposure have been found free from diphtheria bacilli in an approved laboratory.

Quarantine of premises: until release of patient and household contacts.

[Meningococcus meningitis or meningococcemia (septicemia): isolation until two weeks after the temperature has become normal.]

[Personal quarantine of children of household until release of patient.]

[Poliomyelitis: isolation until fourteen days after the day of the onset of the disease.]

[Personal quarantine of children of household until release of the patient.]

Scarlet fever: isolation until twenty-one days after the development of the disease and until all discharges from the nose, throat, and ears, and suppurating glands have ceased, provided that such isolation shall not continue for more than ninety days.

Personal quarantine of household contacts, except as otherwise provided herein, until the release of the patient, provided that if such contact does not continue to reside on the same premises as the patient, quarantine shall continue until one week after last exposure.

This amendment shall take effect July 15, 1944.

Regulation 28. [Records] Reports of tuberculosis cases confidential. [Records of the state department of health, or of any local department of health or local health officer having custody of such records, or of any laboratory, clinic, or other institution relating to cases of tuberculosis, shall be confidential, except that access to such records by representatives of official public agencies or nonofficial agencies concerned with the control of tuberculosis may be permitted at the discretion of the state or local health officer having custody of such records. A statement as to the existence of tuberculosis in an individual may be made to an agency as above indicated by a state health officer or local health officer having custody of tuberculosis case records.] A state or local health officer authorized by law to receive laboratory or other reports relating to cases of tuberculosis may disclose information contained in such reports only when in his judgment [such disclosure] it will serve the best interest of the patient or his family, or contribute to the protection of the public health. Such officer may, subject to the foregoing purposes, permit access to such reports by representatives of official or nonofficial agencies concerned with the control of tuberculosis. [An official or other person to whom such information is furnished or to whom access to such records has been given shall not disclose such information except in so far as is necessary to serve the best interest of the patient or his family, or contribute to the protection of the public health.]

This amendment shall take effect July 15, 1944.—Reprinted from Health News, July 17, 1944

## New York Academy of Medicine to Hold Graduate Fortnight in October

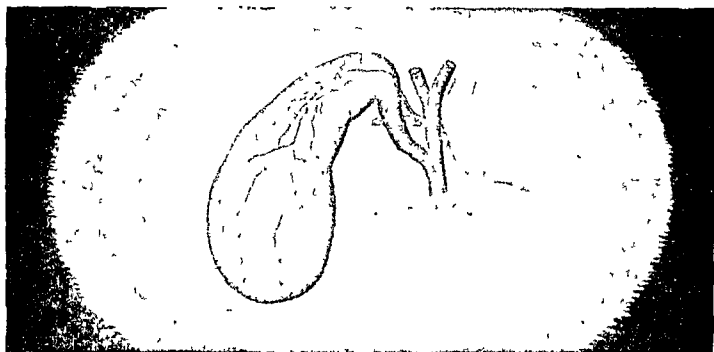
THE seventeenth Graduate Fortnight of the New York Academy of Medicine will be held in New York City, October 9-20. The subject will be "Infections and Their Treatment." The program will consist of morning panel discussions, afternoon hospital clinics, evening addresses, and scientific exhibits and demonstrations.

Except for men in uniform, admission will be by registration card only. Fellows of the Academy will

be furnished registration cards without application. Others will receive cards after sending a check for five dollars, payable to the New York Academy of Medicine, to 2 East 103rd Street, New York 29, New York.

The officers of the Academy who are responsible for the Fortnight are: Arthur Freeborn Chace, president; Herbert B. Wilcox, director; The Com-

[Continued on page 1818]



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[Continued from page 1816]

mittee on Medical Education: Bernard S. Oppenheimer, *chairman*; the Graduate Fortnight Committee: Ralph H. Boots, *chairman*, Mahlon Ashford, *secretary*, George F. Cahill, Ralph Colp, Ross Golden, Franklin M. Hanger, Harrison S. Martland, Rustin McIntosh, R. Townley Paton, Robert E. Pound, and Charles F. Tenney; Committee on Hospital Clinics: R. Townley Paton, *chairman*, Hattie E. Alexander, Charles H. Nammack, J. M. Lewis, Thomas H. McGavack, Frederic D. Zeman, Louis Berger, Clarence E. de la Chapelle, Louis Leiter, George E. Milani, Reuben Ottenberg, Walsh McDermott, Edward Kellogg, Henry H. Ritter, Franklin M. Hanger, Frederick H. Amendola, Joseph Hajek, Jerome L. Kahn, and Albert H. Aldridge; Committee on scientific exhibit: Robert E. Pound, *chairman*, Courtenay I. Headland, Asa Liggett Lincoln, and Margaret Stanley-Brown; Committee on panel discussions: Charles F. Tenney, *chairman*, David P. Barr, Russell L. Cecil, Samuel J. Kopetzky, and Joseph Earle Moore.

Questions for the morning panel discussions should be sent in advance to Dr. Mahlon Ashford at the Academy or in writing to the chairman during the discussion.

The first discussion will be held Tuesday, October 10, 11:00-12:30 A.M., on the subject, "Pneumonia Types and Their Response to Various Forms of Chemotherapy." Dr. Russell L. Cecil will be chairman, and the members will be Dr. Alvan L. Barach, Dr. Maxwell Finland, of Boston, and Maj. Norman Plummer, (MC), AUS. On Friday, October 13, 11:00-12:30 A.M., the subject will be "Treatment of Syphilis and Gonorrhea." Dr. Joseph Earle Moore, of Baltimore, will be chairman, and the members will be Dr. Oscar F. Cox, of Boston, Dr. Harry Eagle, of Baltimore, and Dr. Evan W. Thomas. On Tuesday, October 17, 11:00-12:30 A.M., the subject will be "Treatment of Infections of the Eye, Ear, and Upper Respiratory Tract." Dr. Samuel J. Kopetzky will be the chairman, and the members will be Dr. Conrad Berens, Dr. C. Ward Crampton, Dr. W. Morgan Hartshorn, Dr. Wesley M. Hunt, Dr. Charles J. Imperatori, Dr. John D. Kernan, and Dr. Andrew B. Paul.

The afternoon hospital clinics will be held at Bellevue and Beth Israel on Tuesday, October 10; at Babies Hospital and Montefiore on Wednesday, October 11; at Morrisania and Mt. Sinai on Thursday, October 12; at the Home for Aged and Infirm Hebrews and Post-Graduate on Friday, October 13; at Lenox Hill and Woman's Hospital on Monday, October 16; at St. Luke's and Willard Parker on Tuesday, October 17; at Jewish Hospital of Brooklyn and Presbyterian on October 18; at Flower-Fifth

Avenue and New York on October 19; and at Polyclinic and Roosevelt on October 20.

The evening sessions will be held at the Academy at 8:30 P.M. On October 9 Dr. Arthur Freeborn Chace will deliver the address of welcome. Following this Dr. René J. Dubos will deliver the Ludwig Kast Lecture—in memory of Dr. Ludwig Kast, who proposed the Graduate Fortnight—entitled "The Mode of Action of Antibacterial Agents." Dr. Colin MacLeod will speak on "Factors Which Influence the Choice of Antibacterial Agents." On Tuesday, October 10, Brig. Gen. Hugh H. Morgan, USA, will speak on "Sulfonamides in the Control of Streptococcus Infections and Comdr. Alvin F. Coburn, MC-(S), USNR, will discuss "Mass Sulfadiazine Prophylaxis of Respiratory Diseases in the U.S. Navy."

On October 11 Dr. Francis G. Blake will discuss "Rickettsial Infections in the Southwest Pacific Area" and Brig. Gen. S. Bayne-Jones, USA, will give a lecture, "Infectious Hepatitis." On October 12 Dr. Joseph Earle Moore will speak on "Chemotherapy of Syphilis" and Dr. John F. Mahoney will speak on "Chemotherapy of Gonorrhea." On October 13 Dr. Russell L. Cecil will discuss "Chemotherapy in Acute Upper Respiratory Infections." Dr. Thomas Francis, Jr., will deliver the Carpenter Lecture—in memory of Dr. Wesley M. Carpenter—on the subject, "Influenza—Methods of Study and Control." On October 16 the first lecture will be "The Use of Penicillin in the Treatment of Pneumococcal Infections," by Dr. William S. Tillett, and the second will be "Primary Atypical Pneumonia," by Dr. John H. Dingle.

On October 17 Dr. J. Albert Key will speak on "Treatment of Poliomyelitis," Capt. Lewis K. Ferguson, (MC), USNR, will speak on "Treatment of Burns and War Wounds," and Dr. Philip D. Wilson will lead the discussion. On October 18 Dr. Harrison F. Flippin will discuss "Recent Developments in Sulfonamide Therapy" and Dr. Charles F. Janeway will speak on "Use of the Immune Globulin Fraction of Human Plasma in Acute Infections." On October 19 Dr. Wiley D. Forbus will give a lecture entitled "The Reactions of Tissues Following Infection and Their Place in an Environmental Conception of the Nature of Diseases." Lt. Comdr. Harold J. Harris, (MC), USNR, will speak on "Brucellosis (Undulant Fever)—Problems of Diagnosis and Treatment."

On October 20 a panel discussion on "The Evaluation of Sulfu Drugs and Penicillin" will be led by the chairman, Dr. David P. Barr. The members will be Dr. René J. Dubos, Dr. Colin MacLeod, Dr. John F. Mahoney, Dr. Frank L. Melaney, and Dr. William S. Tillett.

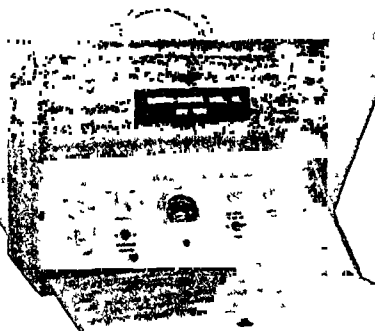
## Postwar Training of Medical Corps Officers

THE Office of the Surgeon General has announced the appointment of a committee to formulate plans for postwar training of Medical Corps officers who will be separated from the military service at the end of the war. The committee consists of Brig. Gen. Raymond W. Bliss, Chief of Operations Service, *Chairman*; Brig. Gen. James S. Simmons, Chief of Preventive Medicine Service; Col. James R. Hudnall, Chief of Personnel Service; Brig. Gen. Fred W. Rankin, Director of Surgery Division;

Brig. Gen. Hugh J. Morgan, Director of Medicine Division; Col. Floyd L. Wergeland, Director of Training Division; Col. William P. Holbrook, MC, and Lt. Col. R. H. Meiling, M.C., representatives from the Army Air Forces; Col. R. B. Skinner, MC, representative from the Army Ground Forces; George B. Darling, M.D., representative from the National Research Council.—*Release from the Office of the Surgeon General, July 22, 1944*

[Continued on page 1820]

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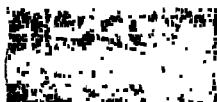


FIGURE A—Photographic Method

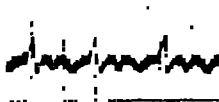


FIGURE B—EPL Method



FIGURE C—Calibration

The exact similarity between the standard photographic cardiogram and the direct instantaneous cardiogram on this new EPL instrument is indicated in Figures A and B, which are records of the same subject taken a few minutes apart.

**NOTE:** It has been determined by a series of measurements that cardiograms made on this instrument have no clinically detectable deviations from those made with the use of a high speed inertia less cathode ray oscilloscope.

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[Continued from page 1818]

## Columbia Announces Postgraduate Courses in Clinical Medicine in October

THE faculty of medicine of Columbia University will conduct postgraduate courses in clinical medicine at Mount Sinai Hospital, New York City. The first semester will begin the week of October 2.

Part-time courses will be given in allergy, anesthesia, cardiovascular diseases, chemistry, advanced diseases of the chest, diagnosis and therapy, advanced electrocardiography, fluoroscopy and x-ray of the heart, gastroenterology, gastroscopy, elementary hematology, diseases of the kidneys and arteries, diseases of the liver and biliary passages, advanced clinical neurology, neuroanatomy, neuropathology, electroencephalography, embryology of the eye, external diseases of the eye, extraocular muscles, histopathology of the eye, ophthalmic neurology, ophthalmic surgery, elementary ophthalmology, physiologic optics, refraction, slit lamp microscopy, orthopaedics, otology, pediatrics, pharmacology, physical therapy, physiology of the gastro-intestinal tract, medical proctology, surgical proctology, and tropical medicine.

The courses in histopathology of the eye, ophthalmic surgery, and elementary ophthalmology will begin in September. The courses in neuroanatomy and neuropathology can be taken as full-time courses.

A full-time course, "Recent Advances in Gynecology," will be given November 13-18.

Applications should be submitted before September 15. For further information address the Secretary for Medical Instruction, The Mount Sinai Hospital, Fifth Avenue at 100th Street, New York 29, New York.

## Symposium on Fluorine and Dental Caries

THE first open meeting of the New York Institute of Clinical Oral Pathology will be held in Hosack Hall, the New York Academy of Medicine, on the evening of October 30. Speakers whose names will be announced later will participate in a symposium on "Fluorine and Dental Caries."

Members of the medical, dental, public health, and other professional groups are invited to attend. Further information may be obtained from the executive secretary of the New York Institute of Clinical Oral Pathology, 101 East 79th Street, New York 21, New York.

## County News

### Clinton County

The county society held a dinner meeting on July 3 at 6:30 p.m. at the Hotel Witherill in Plattsburg.

Dr. L. Whittington Gorham, of Albany Medical College, addressed the meeting on penicillin therapy.\*

### Erie County

Governor Dewey has appointed Alfred H. Kirchofer, managing editor of the Buffalo *Evening News*, and five physicians to the board of visitors to the State Institute for the Study of Malignant Diseases in Buffalo.

The physicians are Dr. George W. Cottis, Jamestown, past president of the State Medical Society; Dr. Walter L. Machemer, chief of the surgical department of Buffalo Children's Hospital; Dr. John J. Morton, chief surgeon of Strong Memorial Hospital, Rochester; Dr. James B. Murphy, New York City, a member of Rockefeller Institute; and Dr. Frederick S. Wetherell, surgeon of Memorial and St. Joseph's Hospitals, Syracuse.\*

### Oneida County

Dr. Herbert H. Bauckus, of Buffalo, president of the New York State Medical Society, addressed the Oneida County Medical Society at its monthly meeting in Utica on July 11. His subject was "The Coming Medical Era."

Dr. Bauckus is the first president of the Western New York Medical Plan, and past chairman of the Economics Committee of the State Society.

Investigation by the Red Cross of nonrecurring medical emergency cases in families of soldiers of the rank of corporal or less, and assistance for cases proved to be without any other help was explained.

The new plan of cooperation between the Utica Chapter of the Red Cross and the county society for the benefit of needy cases was presented by Dr. A. R. Hatfield, Jr.

Dr. P. L. Turner gave a report for the penicillin committee.

Dr. F. M. Miller, Jr., president, presided at the meeting, which opened at 7:00 p.m. with a dinner session.\*

### Orange County

The following hospitals in Orange County have been designated by the War Production Board as depots for penicillin distribution: St. Luke's Hospital at Newburgh; Horton Hospital at Middletown; St. Francis Hospital at Port Jervis.

The Horton Memorial Hospital at Middletown is now associated with Hartwick College at Oneonta as a Cadet Training School for nurses. The two other hospitals associated with Horton Hospital in the practical training of the enrolled cadet nurses are the Fox Memorial at Oneonta and the Murphy Memorial at Rome, New York. The Cadet Training School is headed by Miss Mary Murphy, Director of Education.

### Queens County

The date of the stated meeting of the county society has been changed from Tue day, September 26, to Thursday, September 28, at 9:00 p.m.

The Medical Society of the County of Queens, Inc., proposes to offer its members a course of lectures in industrial medicine. The program will

\* Asterisk indicates that item is from a local newspaper.

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**Supplied:** Capsules for prompt and symptomatic relief. Tablets, enteric-coated, for delayed action and prophylactic relief.  
(Half-strength available for children in capsules only)

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\* A New Type of Medication to be used in Bronchial Asthma and other Allergic Conditions—New Eng. J. Med. 223: 843-846, 1940

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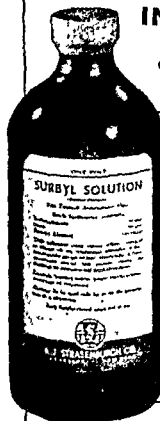
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PHARMACEUTICAL CHEMISTS SINCE 1866

ROCHESTER, NEW YORK

[Continued from page 1820]

be initiated at the regular stated meeting of the society on October 31.

The opportunities in industrial health will be discussed by Dr. Townsend, of the U.S. Public Health Service, from that viewpoint, and by Dr. Sawyer, of the Eastman Kodak Company, for the industrial physician. Thereafter, sessions will be held each Monday and Thursday (holidays excluded) until the ten contemplated meetings have been completed.

The problems to be discussed are:

1. Organization and administration of industrial medical department.
2. Compensation and welfare insurance.
3. Plant survey.
4. Occupational diseases—*pneumoconioses*.
5. Occupational diseases—*dermatoses*.
6. Diseases caused by toxic materials: (a) gases, (b) metals.
7. Environmental control of occupational hazards.
8. Medical and surgical specialties: (a) laboratory, (b) psychiatric, (c) orthopaedic, (d) eye.
9. Related professional specialties: (a) dental, (b) nursing, (c) personnel.
10. Special problems as related to: (a) nutrition, (b) absenteeism, (c) records, (d) rehabilitation.

To those whose attendance warrants, a certificate will be issued, stating that they have completed the course given by the Medical Society of the County of Queens, Inc.

#### St. Lawrence County

Dr. Roscoe D. Severance, associate professor of orthopaedic surgery, Syracuse University College of Medicine, discussed common orthopaedic defects at a meeting of the county society held at 1:00 P.M., July 13, at Massena Country Club.\*

Still active in his profession after more than fifty-five years of continuous practice, Dr. Hiram M. Buchanan, of Watertown, one of the oldest physicians in Jefferson County, both in point of age and years of practice, was 79 years old on June 29.

The doctor, enjoying good health, observed his birthday by performing his usual duties.\*

#### Schenectady County

More than 250 patients and friends from Schenectady and Schoharie counties attended a farewell surprise party for Dr. Donald C. Walker at Red Men's Lodge, Esperance, before he left for Sampson Naval Center. Dr. Walker has received a commission as a lieutenant in the Medical Corps.

A purse was presented to Lieutenant Walker, the local Red Cross gave him its forty-fifth sweater, and Mrs. Walker was given a bouquet. The presentations were made by District Attorney James L. Gage, of Schoharie County.\*

#### Suffolk County

Mass x-raying became the order of the day in Babylon Town recently when 3,658 residents, or approximately one-seventh of the total population of the area, received chest x-ray examinations.

It was the first town-wide program of its kind in Suffolk County and was jointly sponsored by the Suffolk County Tuberculosis and Public Health Association, the Suffolk County Health Department, and Suffolk Sanatorium. The activity was designed to promote the current program of tuberculosis control through the cooperative efforts of private physicians, official and nonofficial agencies, and community leaders.

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Stanislaus N. Borowiak	61	Buffalo	July 11	Buffalo
Willis E. Bowen	72	Cornell	July 11	Manchester
Emily C. Charles	81	N.Y.M.C. & H. Wom.	July 9	Manhattan
Spencer L. Dawes	80	Bellevue	July 13	Kingston
Edna B. Dayton	67	W.M.C. Pa.	July 11	Remsenburg
Peter J. Fagan	74	Albany	April 1	Manhattan
Charles W. Farr	68	Vermont	July 11	Buffalo
Thomas F. Foley	68	Buffalo	July 11	Buffalo
Richard M. Forsythe	31	Western Reserve	March 30	Valhalla
Charles W. Hacker	60	Albany	July 7	Albany
Gene W. Hair	36	Buffalo	June —	Buffalo
George D. Hamlen	78	N.Y. Univ.	June 5	Bayside
Bertalan Hoch	47	Royal Elizabeth Univ.	July 10	Manhattan
Jerome Kingsbury	70	Bellevue	July 15	Manhattan
Adolph F. Konther	78	L.I.C. Hosp.	June 19	Brooklyn
Fred M. Lemen	64	Buffalo	June 24	Buffalo
Lucy A. Marraffino	39	P. & S., N.Y.	June 6	Manhattan
Jessie L. R. Marshall	45	Birmingham; M.R.C.P. & S., England	July 19	Manhattan
Richard Savine	67	L.I.C. Hosp.	July 20	Kew Gardens
Frank Stradling	69	P. & S., N.Y.	May 1	Earlville
Charles M. Walrath	88	Buffalo	July 9	Ellicottville



# HYPERTENSION CASUALTIES



## ... Cardiac Failure

Essential hypertension regularly results in concentric hypertrophy of the left ventricle. If the hypertension persists, the hypertrophied heart eventually dilates and fails.

To aid the reduction of blood pressure quickly *without shock*—and maintain the reduction—physicians prescribe Natrico Pulvoids. This synergistic combination of vasodilators obtains full action of the nitrites, but avoids the disadvantages of the constituents when used alone.

### SYMPTOMATOLOGY

Natrico Pulvoids are especially useful in the symptomatic treatment of essential hypertension and for relief of *cardiac pain, headache, dizziness and tinnitus* due to arterial hypertension. Each Pulvoid contains. Potassium Nitrate, 2 grs, Sodium Nitrite 1 gr, Po. Ext. Crataegus Oxyacantha  $\frac{1}{4}$  gr, Nitroglycerin 1/250 gr. Supplied: Bottles of 100 Pulvoids

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Proper shoes are essential to supplement the doctor's own treatments—but a proper source of supply is essential, too, and the patient of any age-group should be directed to competent and trustworthy fitters of correctly designed shoes of scientific construction. Pediforme footwear have the qualities desired by the doctor and the attractiveness so vital to the sensitive patient.

Convenient sources:

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BROOKLYN, 322 Livingston St. EAST ORANGE, 29 Washington Pl  
843 Flatbush Ave.  
HEMPSTEAD, L. I., 241 Fulton Ave. HACKENSACK, 299 Main St.

# Hospital News

## Penicillin Provided Free to Hospital Service Members

**PENICILLIN** will hereafter be provided, when necessary, without charge to the hospitalized members of Associated Hospital Service using semi-private and ward accommodations in two hundred and sixty hospitals of the New York area, according to an announcement by Louis H. Pink, president.

A special reserve fund is to be set up to reimburse hospitals for additional costs because of the use of

this and other unusual remedies required for the treatment of Associated Hospital Service members.

Mr. Pink said: "The board of directors believes that the Associated Hospital Service, in addition to budgeting normal hospital expense for its members, should help them take advantage of new developments in medicine whenever possible. . . . If other new and unusual drugs or services become available, their cost . . . will be met in the same manner."

## Hospital Superintendents Meet in Schenectady

**R**ECENT developments and current practice in the treatment of tuberculosis were discussed at the annual meeting of the State Tuberculosis Hospital Superintendents' Association at Glenridge Sanatorium in Schenectady on June 30.

Among those present at the meeting were Dr. James M. Blake, superintendent of Glenridge and past president of the association; Dr. Robert E. Plunkett, retiring secretary of the association, and members of the Glenridge board of managers, Laurence G. Magner, James A. Westlin, Dr. E. M. Stanton, and Howard White.

Dr. Fred C. Holcomb, of Kingston, was elected president, succeeding Dr. Blake, while Dr. Blake was elected secretary-treasurer of the organization. The next meeting of the group will be held in Kingston at the Ulster County Tuberculosis Hospital.

Dr. E. M. Medlar, of Bellevue Hospital, New York, and Dr. C. M. Graham, of Biggs Memorial Hospital, Ithaca, led a discussion on the use of diazone, a drug given wide publicity on the basis of being a cure

for tuberculosis. Both men stated that any credit given the drug had to be properly evaluated, and that, on the basis of current work, premature publicity had been given the treatment. The use of diazone, they stated, was still in the experimental stage, and, while the medical profession was still in search of a form of chemotherapy, diazone did not seem to be the answer.

Dr. B. L. Vosburgh, director of the General Electric Hospital, described the cooperation between the company and Glenridge in finding cases of tuberculosis principally by means of pre-employment x-rays.

The technical part of the meeting was completed with a discussion of thoracic surgery by Dr. A. M. Skinner, of Oneonta. A recommendation for the use of chest x-rays as part of general hospital procedure was made.

Dr. H. P. Groesbeck, president of the Glenridge board of managers, welcomed the superintendents to Schenectady.

## Improvements

Fully equipped to provide the biochemical requirements for further exploration of children's diseases, on June 30 the new research laboratory of Buffalo's Children's Hospital was opened for inspection to members of the hospital board, the University of Buffalo Medical School, physicians, and nurses.

The laboratory, which will be under direct supervision of Dr. Edward M. Bridge, research professor of pediatrics at the University of Buffalo, has some of the more recently developed scientific apparatus with which it hopes to supply the general chemical needs of the hospital.

There is a new unit for the study of epilepsy in its early stages, which includes the electro-encephalograph, a device capable of detecting certain brain

disturbances frequently responsible for epileptic conditions. Another phase of the laboratory's work will be carried on with the benefit of a metabolism chamber to study irregularities springing from sugar metabolism in children and especially in premature babies. At a later date, Dr. Bridge hopes to carry on laboratory research in kidney diseases relative to blood proteins and immunity.

Health Commissioner Francis E. Fronczak, who attended the opening of the laboratory, said "This sort of research should be carried on in every hospital. It is a fine laboratory and it should contribute heavily to the benefit of the public health."

The laboratory is a gift of the late E. M. Statler, hotel executive, and was made possible through the Statler Trust.\*

## At the Helm

Alfred Renshaw and Ellis Auer were elected members of the board of directors of the Associated Hospital Service of the State Capital District at the board's recent meeting.

Mr. Renshaw, president of the board of trustees of Albany Hospital, was elected to the vacancy caused

by the absence of Everett R. Jones. Mr. Auer, of Schenectady, replaces the late John Barry.\*

. . . .

Dr. Everett A. Jacobs, former Hudson physician, has been appointed head of the x-ray department at

[Continued on page 1826]

\* Asterisk indicates that item is from a local newspaper.

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Riboflavin	5 Mg.
Niacin	20 Mg.
Niacin	50 Mg.
Niacin	100 Mg.
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Niacinamide	50 Mg.
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# Woman's Auxiliary

## To the Medical Society of the State of New York

### County News

**Broome County.** The annual meeting of the Broome County Woman's Auxiliary was a luncheon meeting at the American Legion Clubhouse in Johnson City.

The table was decorated with a centerpiece of rambler roses and blue delphinium beautifully arranged by Mrs. Maxwell Snider. Mrs. R. T. Allen was the hospitality chairman and Mrs. William Low was in charge of the program, which included annual reports of all the committees.

The officers for the coming year were elected at this meeting. They are as follows: president, Mrs. M. M. Monserrate, re-elected; vice-president, Mrs. Harry Levy; secretary, Mrs. C. M. Allaben; corresponding secretary, Mrs. W. A. Ackroyd; treasurer, Mrs. R. M. Vincent. Directors are Mrs. M. W. Welch, Mrs. G. R. Cheatham, and Mrs. W. J. Farrell.

**Columbia County.** A strawberry festival, held in the Central House, marked the June meeting of the Columbia County Auxiliary, with Mrs. H. G. Henry presiding. After the usual business meeting Mrs. H. J. Noerling reported on the State Auxiliary Convention which was held in New York City. Mrs. Charles Briwa, of North Claverack, was announced the county commander of the Woman's Field Army for the Control of Cancer. The hearty support and cooperation of the auxiliary was requested for her in her work. The auxiliary is expecting to have a booth at the Chatham Fair in the Health Building. The auxiliary received high praise for their work and cooperation by Dr. C. L. Schultz, president of the county medical society.

**Herkimer County.** Officers of the Herkimer County auxiliary were elected at a meeting at the home of Mrs. F. C. Sabin. Mrs. Byron Schultz was

chosen president; Mrs. M. H. Newton was elected president-elect; Mrs. C. C. Whittemore, vice-president; Mrs. B. J. Kelly, recording secretary; Mrs. Howard Murray, corresponding secretary; and Mrs. Gustav Lowenstein, treasurer. Reports of the state convention were given by Mrs. D. F. Aloisio and Mrs. Byron Schultz.

**Nassau County.** New officers of the Nassau County Auxiliary and members of the Board met at luncheon at the North Hempstead Country Club to hear reports and discuss plans for the coming year. The new officers are as follows: Mrs. L. A. Van Kleeck, president; Mrs. N. H. Robin, president-elect; Mrs. C. A. Long, first vice-president; Mrs. J. L. Neubert, second vice-president; Mrs. W. P. Bartels, corresponding secretary; Mrs. T. J. Evers, recording secretary; and Mrs. George Christmann, treasurer.

The program for the year will include a membership tea in September, the Christmas party, card parties, and luncheons. Mrs. Van Kleeck announced that some of the activities of the group which have been discontinued since the war will be revived. Cancer dressings and bandages will be made at next year's meetings. The Board will meet again on September 19.

**Warren County.** Mrs. Burke Diefendorf was re-elected president of the Warren County Auxiliary at the annual luncheon meeting held in The Queensbury. Other officers elected were vice-president, Mrs. W. W. Bowen; recording secretary, Mrs. L. C. Husted; treasurer, Mrs. N. R. Frasier; corresponding secretary, Mrs. D. A. Zurlo. Annual reports were given and very enthusiastic and comprehensive reports of the state convention were given by Mrs. John Griffin and Mrs. Morris Maslon

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1. Poor salaries paid in mental hospitals, long hours, and poor living conditions have not been conducive to attracting personnel.

2. In thirteen states, no course of any kind in psychiatric nursing is given, but in one state and the District of Columbia, every student has this experience.

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★ WHY NOT SEND  
Your Arthritic Patients  
TO THE  
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"STANGER" galvanic medicated baths are recommended by various authorities in the treatment of exudative inflammations involving the joints, ligaments and tendons, such as bursitis, fibrositis, ankylosis, gout, etc. The baths stimulate the skin and improve the circulation through their hydrocataphoretic action, thereby accelerating metabolism eliminating waste products

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★ "Boys" Town in Reality

In the small village of Woburn, England, the stork has really taken the war seriously. Since the fall of 1942 every baby born to the wives of the place has been a boy. Not a single member of the gentler sex has been in the lot. In fact, only two girls have been born there since September 1941.

Superstitious, prospective mothers yearning for a girl child left the town to bear their children elsewhere—but the records still show that all give birth to boys.

Maybe the unaccountable theory that more boy babies than girl babies are born in time of war may have something to do with the plight of the Bedfordshire village which is now facetiously being called "boys' town."

But the doctors of the local district, baffled by the situation, frankly admit they do not know how to explain the phenomenon



To Prevent Transfusion Reactions...to accurately clarify ETIOLOGY OF ERYTHROBLASTOSIS FETALIS

Our anti Rh serum—artificially produced by the injection of rhesus blood into guinea pigs—offers the highest percentage of correct positive results since many of the anti Rh sera of human origin do not agglutinate all the variants. We invite you to write for our illustrated brochure, "The Story of Blood Groups", a comprehensive treatise on the various blood grouping sera.

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★ **COOPER CREME**  
No Finer Name in Ethical Contraceptives  
WHITTAKER LABORATORIES, INC. NEW YORK, N. Y.

[Continued from page 1824]

Memorial Hospital, Catskill, a position from which Dr. William M. Rapp recently resigned after eleven years of service.\*

The new chief of surgery at St. Joseph's Hospital in Yonkers is Dr. Robert Emmet Walsh.

### Newsy Notes

Northern Westchester Hospital's \$500,000 building fund campaign reached a dramatic climax early in July when volunteer workers reported 968 new subscriptions amounting to \$34,827, which sent the grand total of the fund to \$539,256.

Included in this sum was an additional pledge of \$100,000 from the *Reader's Digest*, which was announced by Carll Tucker, president of the hospital and general chairman of the campaign. Half of the *Digest* sum will be applied to the Horace Eddy Robinson Memorial.\*

Representatives of business, labor, medicine, and the clergy started on July 26 a \$350,000 fund-raising campaign for Harlem's Sydenham Hospital and predicted that its new policy would mark the beginning of an era in which no color lines would be drawn in the care of the sick or the training of doctors. Last December Sydenham announced that it would draw its staff from Negro as well as white physicians and nurses and that all facilities would be available to all patients, regardless of race.

City Council President Newbold Morris, honorary chairman of the drive, who was toastmaster at a luncheon at the Hotel Roosevelt, hailed the experiment as a practical application of democratic principles.

Dr. E. M. Bluestone, director of Montefiore Hospital in the Bronx, a member of the fund's sponsoring committee, revealed that the plan had passed the preliminary stages and had been put into operation. "The outlook for a united front toward the sick in our hospitals on a total basis is brighter than ever

Dr. Walsh, who served as a major in the Army Medical Corps in France during the last World War, is physician for the New York Yankees baseball team.

He has been consulting surgeon at St. Joseph's for several years.\*

as a result of the inter-racial principle in Sydenham Hospital," he asserted. "The first in a series of hospital units has been established on the inter-racial principle, with a companion plan that calls for the integration of qualified Negro doctors and other workers in so-called white hospitals."

Dr. Bluestone explained after the luncheon that although no concrete steps had been taken to extend the plan to other institutions, it was believed that success of the project at Sydenham would help to introduce it at other hospitals.

Prof. Eduard C. Lindeman, of Columbia University praised the Sydenham experiment as a "whole-hearted attempt, with no half-way measures or subterfuges" to put inter-racial cooperation on a working basis.

Henry C. Oppenheimer, chairman of the campaign, said that the money raised in the drive would be spent to meet the hospital's deficit for the next four years. Other speakers were the Rev. James Robinson, pastor of the Church of the Master, and Mrs. Ruth Whitehead Whaley, attorney.\*

Funds of \$1,235.74 were realized by the Auxiliary of the Saranac Lake General Hospital as the result of their rummage sale, food sale, and tag day held late in June.

Mrs. Spencer Schwartz was chairman in charge of arrangements for the rummage sale. Mrs. Philip Gingold and Mrs. Samuel Edelberg were in charge of the food sale and Aaron Shapiro was in charge of the tag day.\*

### NO MULTIPLE AMPUTATIONS AMONG YANKS, ARMY SAYS

The Army Surgeon General's Office today dismissed as baseless and irresponsible another "loose talk" rumor circulated since D-Day—that there have been multiple amputations (men who have lost both arms and legs) among Americans on the fighting fronts.

Not a single such case is on record either in Army hospitals in the United States or in base hospitals in England, the Surgeon General's Office said. Even cases of soldiers losing two limbs are rare, only

58 being listed in the last official report on March 21, the War Department office reported.

Army officials added that no amputee is discharged from the service until he has been fitted out with artificial limbs and has been fully taught to use them. Replacements, as more efficient equipment is developed, are made available to discharged veterans without fee through the Veterans' Administration.—*Release from the Office of War Information, July 26, 1944*

### SAMUEL D. GROSS PRIZE

The Samuel D. Gross Prize of \$1,500 will be available this year, according to a recent announcement by the Philadelphia Academy of Surgery. The prize is awarded "every five years to the writer of the best original essay, not exceeding 150 pages, octavo, in length, illustrative of some subject in

surgical pathology or surgical practice found upon original investigations, the candidates for the prize to be American citizens." All essays are to be sent to the Philadelphia Academy in care of the Philadelphia College of Physicians on or before January 1, 1945.

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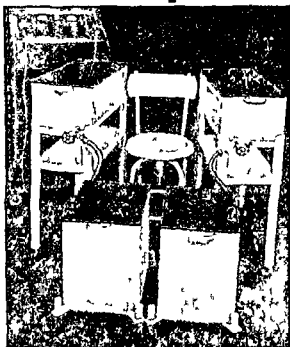
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[Continued from page 1830]

very timely and excellent one. It adequately covers the various problems of "Visual Testing in Industry," "Correction of Visual Defects for the Job," "Visual Skills," "Eye Protection," and "Recent Developments as Related to Industrial Eye Problems."

There is an excellent chapter, written by Dr. Snell, on "Industrial Eye Injuries by Solid Bodies."

The illustrations are well selected; the printing and binding are excellent.

CHARLES A. HARGITT

**Medicine and the War.** (Charles R. Walgreen Foundation Lectures.) Edited by William H. Taliaferro. Octavo of 193 pages, illustrated. Chicago, University of Chicago Press, 1944. Cloth, \$2.00.

This volume is composed of a series of lectures on the part that medicine is playing in this war, couched in nontechnical language. It is more or less a historic analysis of the contributions made to medicine not only in this country but throughout Europe and South America. It will be of especial interest to the laity.

H. M. FEINBLATT

**Synopsis of Neuropsychiatry.** By Lowell S. Selling, M.D. Duodecimo of 500 pages. St. Louis, C. V. Mosby Co., 1944. Cloth, \$5.00.

This book is intended to serve as a specialized guide for students and even specialists in the field of neuropsychiatry. It covers various phases of neuropsychiatry. It covers various phases of neurology and psychiatry, including neuroanatomy, psychological mechanisms, common neurologic syndromes, the psychoses, the neuroses, and mental deficiency. It is reasonably well outlined and the various subjects are very well presented. It is recommended as a practical and helpful guide.

IRVING J. SANDS

**Psychological Medicine. A Short Introduction to Psychiatry.** With an appendix, *Wartime Psychiatry*. By Desmond Curran, M.D., and Eric Guttmann, M.D. Octavo of 188 pages, illustrated. Baltimore, Williams and Wilkins Co., 1943. Cloth, \$3.50.

Despite the experience of World War I, this war again found the services shorthanded as far as psychiatric experts are concerned. In the emergency many physicians who have had no previous experience with mental disorders have had to be impressed into service as psychiatrists.

This English book, whose senior author is on duty with the Royal Navy, is obviously designed to impart some knowledge concerning psychiatric syndromes to men whose duties now require them to have this information. It is brief and to the point, and its only defects must be ascribed to its brevity. The descriptions, as far as they go, are excellent. The dynamics and mechanisms of the mental processes described are either very briefly explained, or not at all. It is to be regretted that no mention is made of those conditions that are on the borderline of psychiatry and the rest of medicine that are apt to reach the attention of the internist first. Dyspepsia, for example, which is an important cause of military disability in the British services, is not to be found in the index.

This readable book will be found useful to physi-

cians who are not psychiatrists who have to brush up on psychiatric nomenclature and syndromes. More extensive tests will be required by students and by those who intend to practice the specialty.

MATTHEW BRODY

**Civilization and Disease.** By Henry E. Sigerist, M.D. Octavo of 255 pages, illustrated. Ithaca, N.Y., Cornell University Press, 1943. Cloth, \$3.50.

Sigerist looks forward to a noncompetitive society in which "every family will have not only its family doctor but also its family health center from which it will be entitled to receive all the advice and help it may need as a public service, and with which it will cooperate in upholding the health of the nation," as in Russia.

The first line of the last paragraph in the final chapter reads: "The problem of financing such health services is secondary."

ARTHUR C. JACOBSON

**A Handbook of Psychiatry.** By P. M. Lichtenstein, M.D., and S. M. Small, M.D. Duodecimo of 330 pages. New York, W. W. Norton & Co., 1943. Cloth, \$3.50.

The book fulfills its purpose of being a handbook of psychiatry for the general practitioner, the nurse, and others who desire a quick reading knowledge of the subject. It reads easily and covers the subject adequately.

The authors have included chapters on psychosomatic conditions and war psychoneuroses which bring these subjects up to date.

Case histories are intelligently interspersed.

J. L. ABRAMSON

**Human Constitution in Clinical Medicine.** By George Draper, M.D., C. W. Dupertuis, Ph.D., and J. L. Caughey, Jr., M.D. Octavo of 273 pages, illustrated. New York, Paul B. Hoeber, Inc., 1944. Cloth, \$4.00.

In this volume Professor Draper's well-known contributions to the study of the human constitution are gathered together and presented in one volume. Although this book is intended primarily for the medical student, no practicing physician, or, for that matter, no social worker or other person whose work brings him into contact with patients can read it without considerable profit.

Draper re-emphasizes an aspect of medicine which, while it dates back to before Hippocrates, has been largely neglected in the past few centuries—namely, the study of the patient as well as of his disease in arriving at a diagnosis and proper treatment. Genetics, growth, heredity, anthropometry, constitutional physiology, the clinical application of constitution studies are all considered in a well-balanced study. Many case histories are appended.

This attitude in medicine is one which could be more profitably studied at the feet of Dr. Draper or some similarly oriented teacher personally, but for those who have not had such an opportunity this book will be an almost acceptable substitute. Students will read it with profit but it will be of even more value to those who have had some experience in clinical practice.

The volume is extremely well written and printed.

MILTON PLOTZ

[Continued on page 1834]



[Continued from page 1832]

**The War and Mental Health in England.** By James M. Mackintosh, M.D. Octavo of 91 pages. New York, Commonwealth Fund, 1944. Cloth, \$0.85.

The author is a splendid example of a physician so psychiatrically intelligent and so gifted in fluent use of English that he drives home the pertinent facts about the facts and factors entering into the mental health status in England during the successive phases of the first four years of World War II. Dr. Mackintosh graphically portrays the psychologic effects of the war upon the civilian as well as upon the soldier. One gains a vivid picture of wartime conditions in England that is very impressive and significantly enlightening concerning cause-effect relationships of war stresses and strains leading to varying degrees of mental ill health. Mention is made of rehabilitation, hospital services, voluntary organizations, professional education, and other means of safeguarding mental health during the postwar period.

This outstanding contribution to mental hygiene literature deserves a wide and thorough reading not only by psychiatrists but also by all those interested in public health and social welfare measures.

FREDERICK L. PATRY

**Sulfonamide Therapy in Medical Practice.** By Frederick C. Smith, M.D. Octavo of 368 pages, illustrated. Philadelphia, F. A. Davis Co., 1944. Cloth, \$5.00.

This book is an attempt to critically review the current literature on the sulfonamides.

The text, however, represents a compilation of statements and findings of others which are usually not assayed by the author's experience. A major objective of the volume is to stress the toxic reactions to the sulfa drugs. This most important subject has not been adequately handled. The literature reviewed is far from complete and the space given to describing methods of counting platelets could certainly have been used to better advantage. Furthermore, the author's minor objections to the local use of sulfonamides will certainly not go unchallenged.

The short appendix covering penicillin is already out of date and should have been omitted.

LEO LOEWE

**Synopsis of Obstetrics.** By Jennings C. Litzenberg, M.D. Second edition. Duodecimo of 405 pages, illustrated. St. Louis, C. V. Mosby Co., 1943. Cloth, \$5.00.

This is the second edition of *Synopsis of Obstetrics* and constitutes an adequate syllabus of obstetric knowledge and practice. The subjects of prenatal care, contracted pelvis, and toxemia of pregnancy have been carefully revised.

This volume should be a real help to all who care to make a rapid review, since each subject is adequately discussed.

J. F. BUTLER

**A Manual of Medical Parasitology.** By Clay G. Huff. Octavo of 88 pages, illustrated. Chicago, University of Chicago Press, 1943. Cloth, \$1.50

In this concise laboratory manual the most important helminthic and protozoan parasites of man are presented briefly with respect to distribution, morphology, life cycle, and laboratory diagnosis.

Seventeen pages are devoted to insects and other

arthropods of medical importance. Several tables and keys for the identification of species are provided. Illustrations are relatively few; there is one excellent colored plate of the malarial parasites of man. The manual is designed as an adjunct to a laboratory course and is not intended to take the place of a standard text or reference work.

ELBERTON J. TIFFANY

**Safe Convoy. The Expectant Mother's Handbook.** By William J. Carrington, M.D. Octavo of 256 pages. Philadelphia, J. B. Lippincott Co., 1944. Cloth, \$2.50.

This handbook for the expectant mother is filled with useful information which will be of value to the mother during her prenatal and puerperal periods and in the care of her infant. Prenatal care, the hygiene of pregnancy, and diet, including a chapter on vitamins, are thoroughly covered.

Chapters on the hospital, labor, relief of pain, and how to care for the new infant are most informative and instructive. The book is written in an easy, story-book style and, among the obstetric facts, the author has woven entertaining anecdotes and historical material about pregnancy and the superstitions which have gathered about it.

*Safe Convoy* will answer many questions about which the expectant mother ponders. It answers these questions in a factual as well as in a delightful manner.

WM. SIDNEY SMITH

**Manual of the Diseases of the Eye.** By Charles H. May, M.D. Eighteenth edition. Duodecimo of 520 pages illustrated. Baltimore, Williams & Wilkins Co., 1943. Cloth, \$4.00.

This edition has again been prepared with the assistance of Charles A. Perara and follows by two years the previous edition. The frequency of the editions and the number of languages into which it has been translated attest to the popularity of this small textbook, which is aimed at the student and general practitioner especially. The chapter on the lacrimal apparatus has been rewritten, and this reviewer is glad to see that slitting the canaliculi is no longer recommended.

There is a good chapter on refraction, which has been rewritten in part by Alson E. Braley. In addition, some illustrations have been omitted and others added. These constitute the chief changes; otherwise the book is the same as before, page for page. It is a book which will probably be found on the shelf not only of the majority of students and general practitioners but of ophthalmologists as well, and deservedly so.

E. CLIFFORD PLACE

**Principles and Practice of Rehabilitation.** By John E. Davis, M.A., Sc.D. Octavo of 211 pages. New York, A. S. Barnes & Co., Inc., 1943. Cloth, \$3.00.

The subject of rehabilitation of disabled service men is one that is the immediate responsibility of the physician. The increasing number of wounded and disabled will require the combined efforts of doctors, social service workers, vocational and recreational specialists, placement advisers, and the interests of the community as a whole. The objective of any rehabilitation program is to restore the physically or mentally disabled veteran so that he may be a useful member of the community and make a

[Continued on page 1836]

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## THE ECONOMY OF "SUBTRACTION"

"Tutoring in Economics"—a feature appearing in *Printers' Ink* gives us a cross-section of scarcity economy in its thirty-eighth lesson which appeared in the April 28th issue.

The effect of scarcity is described briefly and concisely as follows:

"Whatever may be the present supply of anything the world needs or uses, whether it is ample or meagre, if we reduce the capacity for its production,

scarcity for himself, yet desires and does fit in with industrial timidity in other cases as the following sketchy statements will show. Scarcity without demand is powerless.

"1. Scarcity insures high valuation or price in a highly desired thing—gold, precious stones, water in the desert; a pinch of salt may be worth more than a gold coin if salt is not available. Scarcity insures high prices for treasured works of art, fast horses, for display of rare skill in acting or music, but could not do so without vigorous demand.

"2. Scarcity for others, plenty for one's self, is an old, old formula for getting great personal wealth. The holder of the bulk of the mine, the patentee, be held extra wealth sed by destruction, as

in conquered countries where confiscation of means of living makes slaves of the conquered people—has been basically the German search for wealth as seen in the present world war; seeking plenty by causing scarcity to others.

"4. Scarcity created for increasing demand and maintaining prices, i.e., scarcity by limiting or restriction, such as limiting crops or acreage to be cultivated. Such a device is used to avoid cheapening of farm products through unsalable surpluses,

This effects adversely both means to produce and means to purchase products.

"6. Scarcity of supply through monopoly, "cornering" available stocks and boosting prices to excessive profits to those able to effect such monopoly

"Enough has been hinted in these sketchy outlines to suggest the limited benefits of scarcity economy and how it does not foster or encourage growth and all-over industrial expansion; how its outlook is almost always immediate instead of long range; how when any device of scarcity must be used, it should be used with full knowledge that its philosophy is that of subtraction and that world growth and economic evolution call for constant addition and expansion—H. W. D."



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[Continued from page 1834]

satisfactory social, economic, and emotional adjustment in the community where he may reside.

The book is a timely and useful presentation of the basic principles involved in the process of rehabilitation. Much emphasis is placed upon the psychiatrically crippled person. However, the physically handicapped are not ignored. It is a good book, one with which every physician should become acquainted. It is recommended to all who have an interest in the subject.

IRVING J. SANDS

**Female Endocrinology. Including Sections on the Male.** By Jacob Hoffman, M. D. Octavo of 788 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$10.

This book is actually a compendium of our knowledge of female endocrinology. The text covers the subject completely. The illustrations are excellent and the bibliography exhaustive. The carefully compiled index and a series of clearly described laboratory tests will be found helpful. A good reference book.

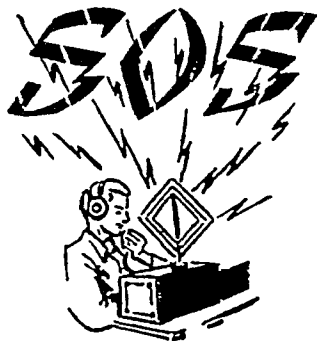
CHARLES A. GORDON

## A FEDERAL MEDICAL SYSTEM

A soldier who is wounded in battle or who falls ill is taken without unreasonable delay to a field hospital, where he receives preliminary treatment and his case is diagnosed and classified. Whereupon he is transported to a base hospital for such further surgical or medical attention as he may need. We have nothing quite like this for civilians—not even in cities of metropolitan size. Dr. Thomas Parran, Surgeon General of the United States Public Health Service, proposed a similar organization for the country as a whole when he appeared before Senator Pepper's committee. He would establish outlying clinics in the sparsely populated districts, hospitals back of these, and base medical centers in the States, with the sick transferred from one to the other, as diseases or injuries demanded. Moreover, these clinics, hospitals, and medical centers would serve as teaching institutions for family physicians who are practicing in outmoded ways because there are no local consultants and laboratories to aid them. With the system advocated by Dr. Parran the great hospitals and schools of the large cities and the remote country clinics would be woven into a single fabric. Grants from the Federal Government would enable the poorer States to forge their own links in this medical chain.

In these days of motor-ambulances and automobiles physicians who practice in small communities would thus be able to transport patients who need special care to the nearest clinic or hospital. Patients who could be treated at home would also benefit, because their physicians would have the diagnostic assistance of a local hospital laboratory—something impossible in many rural districts at present. Those who cannot afford to pay anything would resort directly to the local hospital or clinic for free care, much as they do now in the large cities.

If Dr. Parran spoke more boldly than in former years, it is probably because the conviction is deepening and spreading that something must be done to correct long-standing inequalities in medical care. On this all the authorities agree. Despite the fact that medicine has long been "socialized" for mental cases and for many infectious diseases, especially tuberculosis, by Federal, State, and municipal governments, there is general opposition to the abolition of private practice. Dr. Parran's plan should meet with the approval of even the most conservative. It is not a revolution that is proposed but a reorganization and a wider utilization of medical facilities.—*Editorial in New York Times, July 14, 1944. Reprinted with permission of the Times*



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*Sucrose*—After an increase of 125 percent in the allotment for the last quarter of 1943 and the first three months of 1944, the present basis is 100 percent. The OPA would like to work out a plan for sucrose for drugs on other than the straight quota basis.

*Milk Sugar*—Now under controlled distribution and subject to allocation. Other sugars are critical. Requirements for penicillin are being met in full and the most essential drug uses such as molded tablets have been placed high in the essentiality scale, but

*Sugars*—The situation has greatly improved and the WFA has suspended its order. Adequate supplies are available for production of pounds in ties are available for production of pounds.

*Atabrine (quinacrine)*—Now in ample supply. Present production rates will continue for balance of year.

*Chloral Hydrate*—Due to military requirements, the supply has been short but should become easier in a month or so.

*Vitamins*—The vitamin situation is not entirely satisfactory. Riboflavin is in ample supply. Thiamin hydrochloride is adequate. Vitamin C is more

for all result acid is ble for amide is in short supply. Vitamin A was recently placed under allocation.

*Belladonna*—In ample supply, as is atropine.

*Mercurials* are in abundant supply. Phenol supplies are ample.

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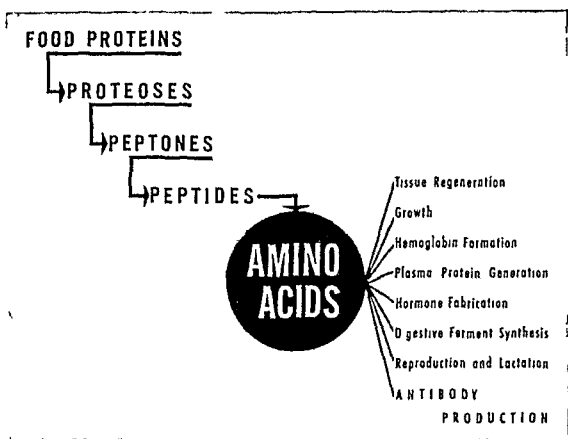
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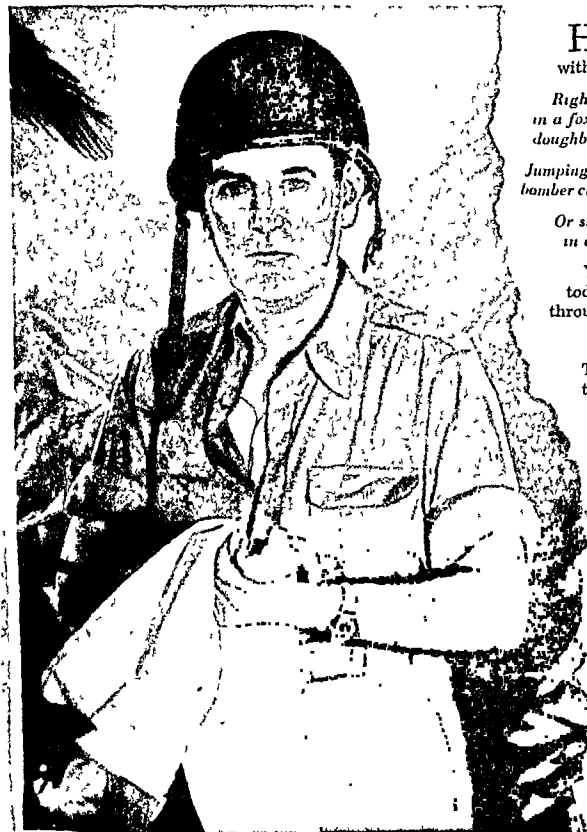
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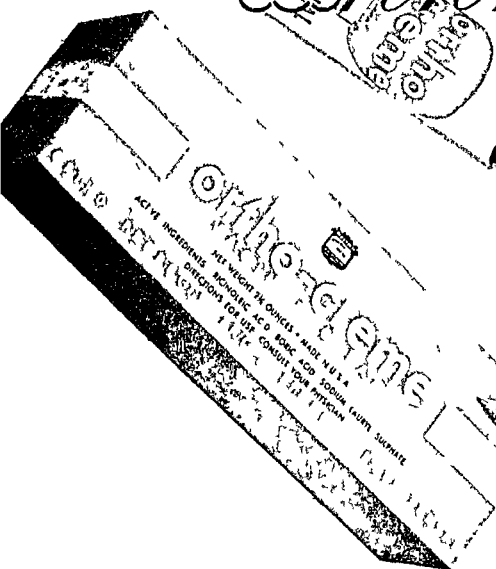
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**EFFECTIVE**  
in Coronary Artery Disease and Edema\*

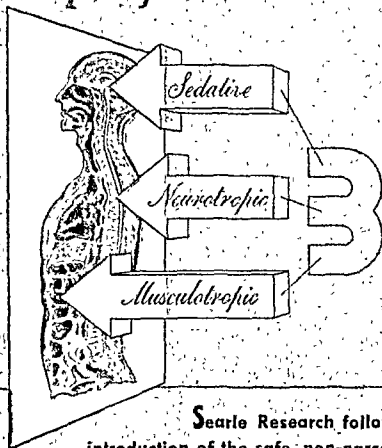
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Theobromine-calcium salicylate

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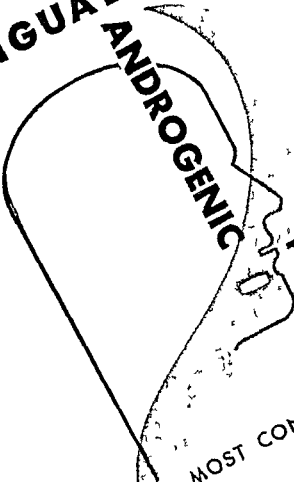
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Effective in smaller doses, e.g.  $\frac{1}{2}$  to  $\frac{3}{4}$  the amount required when methyltestosterone is swallowed.<sup>2</sup>

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<sup>1</sup>Bliskind, G. R.: Proc. Soc. Exper. Biol. & Med. 43:259, 1940  
<sup>2</sup>R. R. Endo 31 73, 1942

<sup>3</sup>Lisser H. and Curtis, L. E.: J. Clin. Endo 3 389, 1943  
 \*Trade Mark Reg. U. S. Pat. Off.

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MARINOL (IMPROVED FORMULA) is an homogenized emulsion of cod liver oil and vegetable oils fortified with fish liver oils of high vitamin A potency to which has been added pure vitamin D<sub>3</sub>.

## OUTSTANDING PROPERTIES

**PALATABILITY:** The desirable properties of the fish liver oils have been retained without the disagreeable taste and odor.

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**HIGH VITAMIN POTENCY:** 5,000 U.S.P. units of vitamin A and 300 U.S.P. units of Vitamin D<sub>3</sub> supply the daily minimum requirements

(FDA) in one teaspoonful.

**LOW COST:** A single teaspoonful daily is a prophylactic dose.

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**EASY ADMINISTRATION** is possible because of unusual potency of small dose.

**CONSUMER PRICE:** Bottle of 6 fl. oz., 85 cents. Bottle of 12 fl. oz., \$1.50 (M.P.R. 392). **HOW SUPPLIED:** Bottles of 6 fl. oz. and 12 fl. oz.

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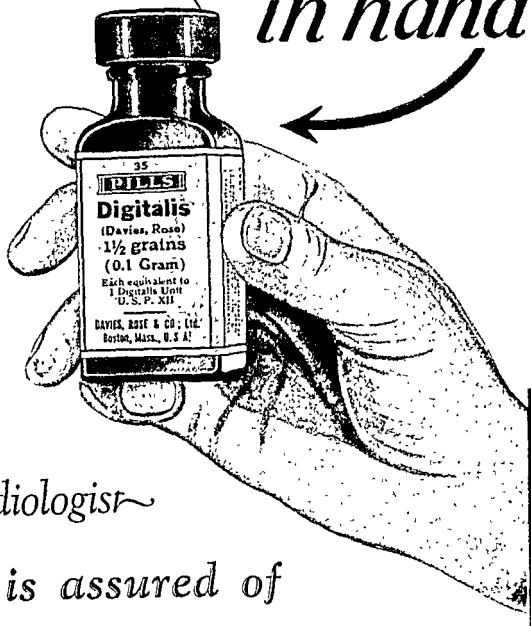
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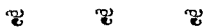
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Being the powdered leaves made into  
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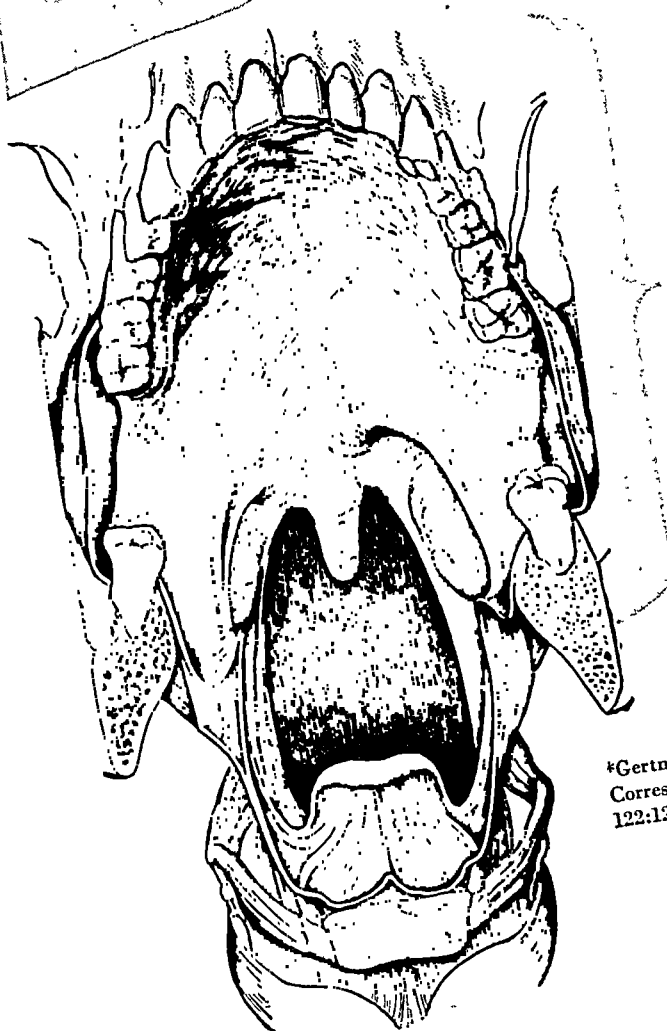
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"By means of the chewing gum method, I believe the concentration of sulfathiazole can be maintained in the mouth and pharynx for some time, since the solubility of the drug is constant. It is well known that gargles do not reach the nasopharynx, while swallowed saliva does."\*



\*Gertner, Lt. J.. M.C., A.U.S.:  
Correspondence, J.A.M.A.  
122:1204, 1943.



# Local Chemotherapy with

*White's*

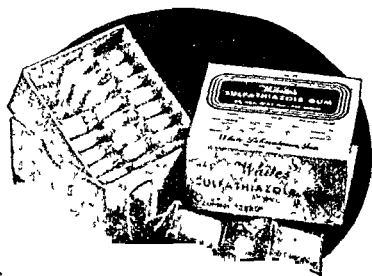
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Chewing even a single tablet provides a high, *sustained* salivary concentration of *locally active* sulfathiazole, averaging 70 mg. per cent over a full hour's chewing. Yet *blood levels* produced by even maximal dosage—and even in children—are for the most part too low to be quantitatively measurable. More effective *local* chemotherapy is thus made possible, while *systemic* toxic reactions are virtually obviated.

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*White's*  
IN PACKAGES OF 24 TABLETS,  
SANITAPED IN SLIP-SLEEVE  
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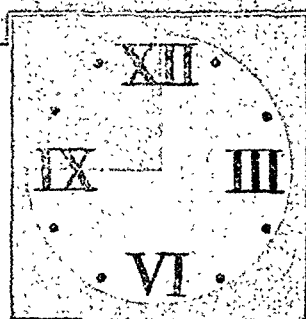
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# Paredrine-Sulfath<sup>®</sup>

*Provides all three:*

- ① Prolonged Bacteriostasis
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(1) *Prolonged bacteriostasis.* Paredrine-Sulfathiazole Suspension is not a solution, but a *suspension* of Microform crystals of free sulfathiazole. These crystals spread rapidly and evenly over the nasal mucosa, forming a fine frosting of sulfathiazole. This frosting does not quickly wash away,

but remains on those areas where ciliary action is impaired by infection—and thus provides prolonged bacteriostasis *precisely where it is needed most.*

While crystals have been observed on *infected* mucosa many hours after instillation, they are quickly swept from *uninfected* ciliated areas. (The Suspension does not impair normal ciliary action.)

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'Paredrine' exerts a shrinking action more rapid, complete and prolonged than that of ephedrine in equal concentration. But it does not produce ephedrine-like central nervous side effects, such as nervousness, restlessness and insomnia.



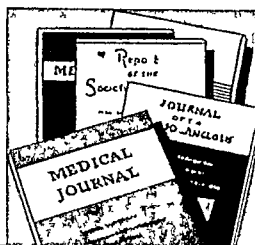
THE UNIQUE VASOCONSTRICTOR

(3) *Therapeutic pH.* The pH range of Paredrine-Sulfathiazole Suspension—unlike that of the highly alkaline solutions of sodium sulfathiazole—is slightly acid (5.5 to 6.5), and identical with the pH of secretions in the healthy nose

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(Sulman, L. D., 1943, Silcox, L. E.  
and Schenck, H. P., 1942)

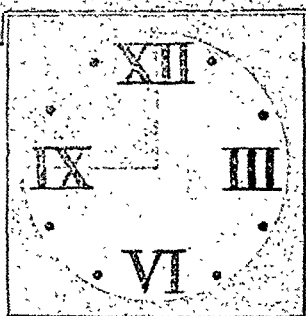
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- ③ Therapeutically Ideal pH



(1) *Prolonged bacteriostasis.* Paredrine-Sulfathiazole Suspension is not a solution, but a *suspension* of Microform crystals of free sulfathiazole. These crystals spread rapidly and evenly over the nasal mucosa, forming a fine frosting of sulfathiazole. This frosting does not quickly wash away,

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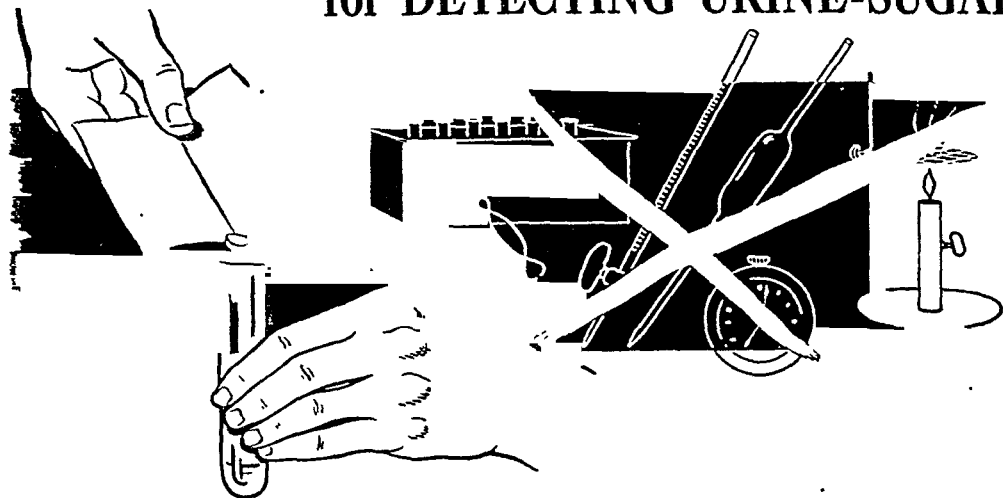
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# RESEARCH EVOLVES NEW TABLET METHOD for DETECTING URINE-SUGAR!



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ELIMINATES:     *Use of flame*  
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PROVIDES:       *Simplicity*  
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Simply drop one Clinitest Tablet into test tube containing proper amount of diluted urine. Allow for reaction, compare with color scale.

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Since absorption of fluid continues in the large bowel, the stool progressively hardens so that when evacuation is attempted, it may require painful straining and irritate tender tissues.

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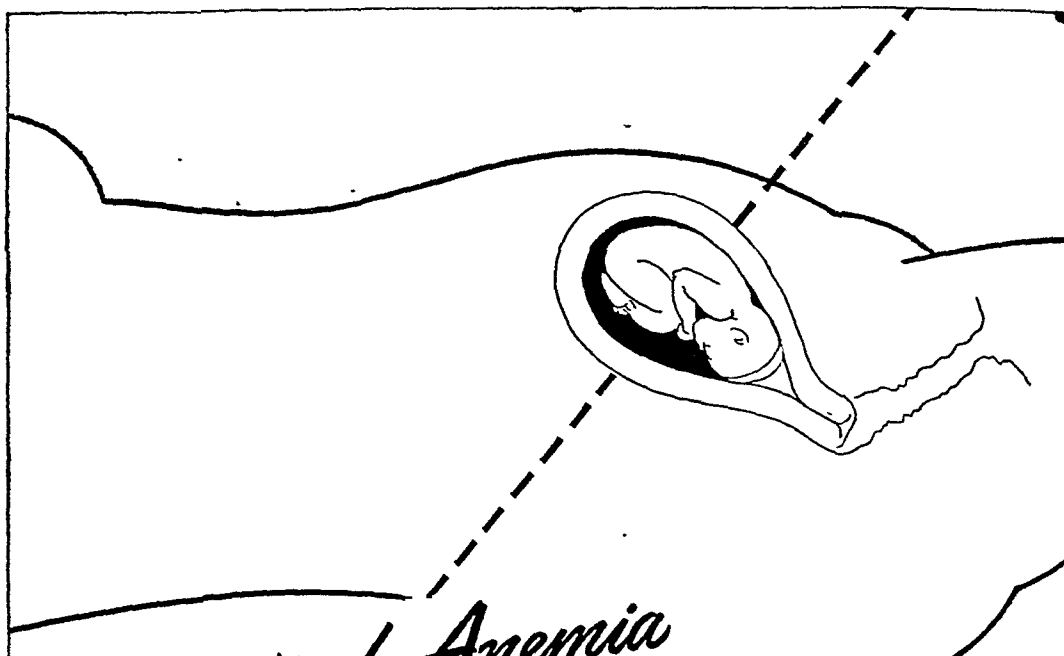
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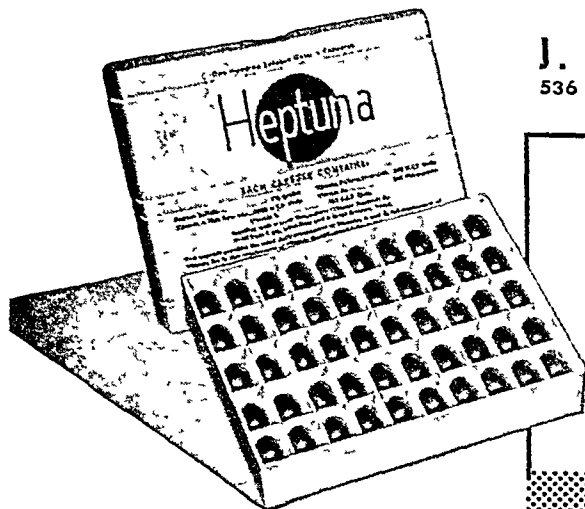
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### AFTER THE FIRST TRIMESTER

Unless adequately compensated, the dual needs of pregnancy present a two-pronged threat—one against the maternal organism, the other against the forming child. The frequency of hypochromic anemia—usually due to iron and vitamin deficiencies—does not justify its consideration as a “normal” feature of the gestation period. It can and should be prevented by the early institution of iron and vitamin therapy and its systematic continuation through puerperium and lactation.

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# Heptuna

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Ferrous Sulfate.....	4.5 gr.
Vitamin A.....	5000 U.S.P. Units
Vitamin B <sub>1</sub> (1 mg.).....	333 U.S.P. Units
Vitamin D.....	500 U.S.P. Units
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together with liver concentrate (vitamin fraction),  
derived from 1 grams of fresh liver and dried  
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Emergency...on the home front too!



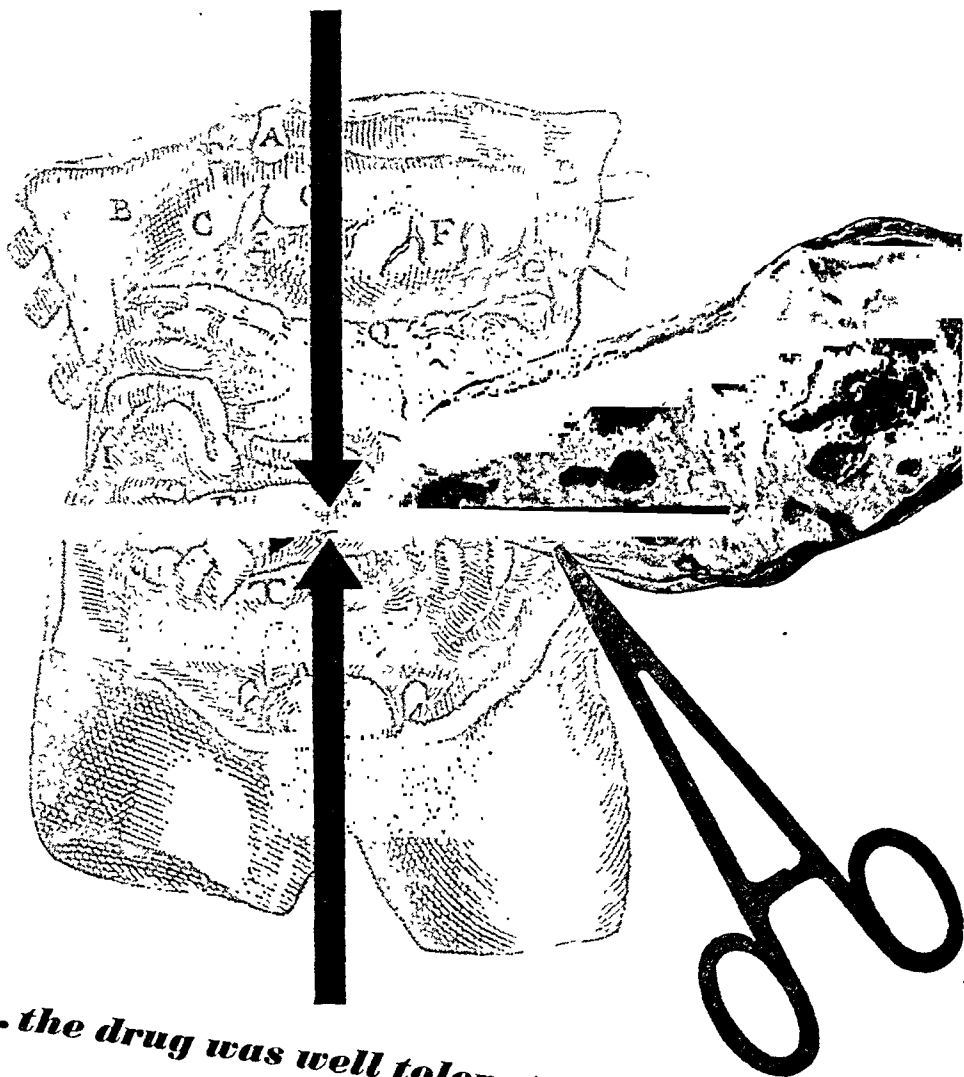
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*“...the drug was well tolerated”*<sup>1</sup>

So ran the report on one clinical test of ‘SULFASUXIDINE’ succinylsulfathiazole in the treatment of bacillary dysentery. Numerous other investigations have demonstrated that ‘SULFASUXIDINE’ succinylsulfathiazole is promptly effective in reducing temperature and that pathogenic bacteria disappear from the stools of carriers within a week.<sup>2</sup>

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‘SULFASUXIDINE’ succinylsulfathiazole has low toxicity and high therapeutic concentration in the intestinal tract, since it is poorly absorbed from the bowel.

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1. U.S. Nav. M. Bull. 40:601, 1942    2. J.A.M.A. 119:615, 1942    3. Behrend, M., Surg. Clinics of N. America, Feb., 1944

**‘SULFASUXIDINE’** *Succinylsulfathiazole*

## The commonest complaint in medicine . . . . .

"Headache is probably the most common complaint in medicine" according to Simons and Wolff.<sup>1</sup>

Prompt and effective relief of the innumerable nonorganic types is dependably achieved with "Tabloid" 'Empirin' Compound through the synergistic analgesic action of acetophenetidin and acetylsalicylic acid. A small quantity of caffeine is included for its antidepressant effect. Purity of ingredients and careful compounding insure the rapid, dependable effect that makes 'Tabloid' 'Empirin' Compound the analgesic of choice.

L. Simons, D. J. and Wolff, H. G. Med. Clin. N. Am., Phila., W. B. Saunders Co., p. 440-441, 1944.



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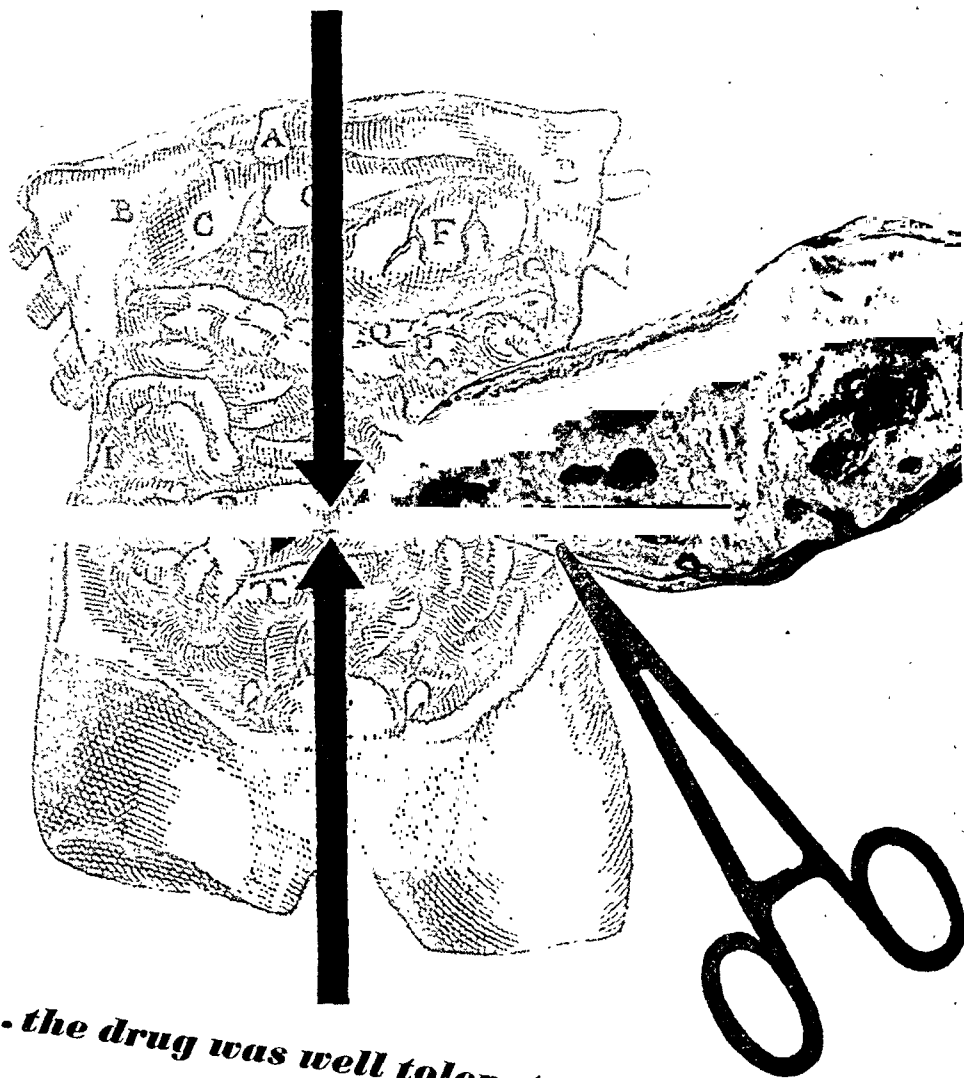
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1. U. S. Nav. M. Bull. 40:601, 1942    2. J.A.M.A. 119:615, 1942    3. Behrend, M., Surg. Clinics of N. America, Feb., 1944

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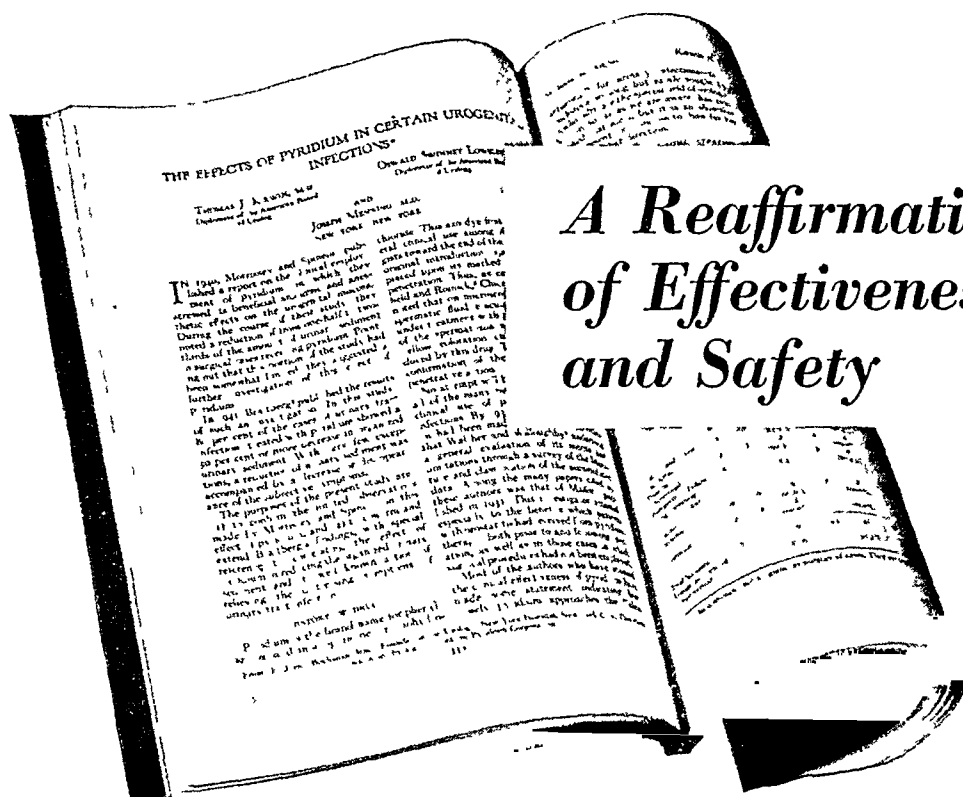
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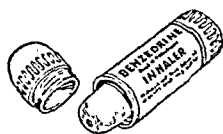
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It is available to Flight Surgeons for distribution to high altitude flying personnel, for relief of nasal congestion.

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A Volatile Vasoconstrictor . . . Outstandingly Convenient, But, First and Foremost, A Highly Effective Therapeutic Agent.

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Use by local application, wet pack, instillation, or irrigation, in treat-

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TYROTHRIN, Parke-Davis, is supplied in 10 cc. vials, as a 2 per cent solution, to be diluted with sterile distilled water before use. It is for topical use only—not to be injected.

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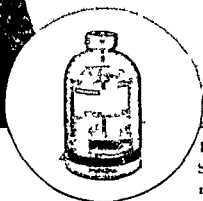
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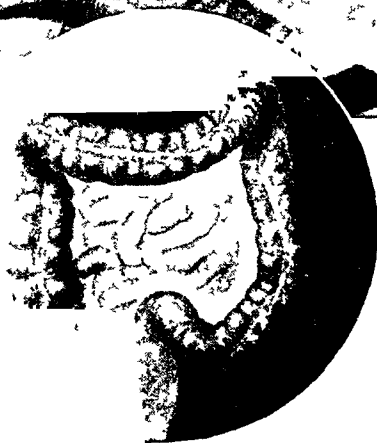


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# NEW YORK STATE JOURNAL OF MEDICINE

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## *Editorial*

### Plain Talk, I

The medical profession of the nation is faced with a problem of great magnitude and importance. It must *sell* voluntary medical care insurance.

The House of Delegates of the Medical Society of the State of New York has provided for the establishment of a Bureau of Medical Care Insurance with a full-time director and staff to undertake this job for this State. That is all to the good.

Fortunately, this Society is already possessed of a Public Relations Bureau with experience and competence in presenting the views of medicine to physicians and the public alike. It must be used to capacity.

Also this Society has a JOURNAL. Its pages can tell a story. Those pages can tell the story of voluntary medical care insurance. They can tell that story to physicians who need to hear it. They can repeat that story in new words. Over and over. If they are used.

The Society is well equipped with tools for the job. Does it know how to use them? Time will tell. The Federal government

knows how to use them. To sell what we consider an inferior product. Government-controlled medicine.

Many people sincerely believe that government medicine is good. We believe that voluntary medical care insurance is better. Our problem is simple. We must make more people believe that voluntary medical care insurance is better than now believe in government medicine.

But first we must believe that ourselves. Enthusiastically and unanimously. You can't sell what you do not believe in; you can't expect the new Bureau of Medical Care Insurance to sell your insurance to people if you yourself do not believe in it. Certainly, it's your plan. Of course you know that it is medicine's answer to compulsory Federal insurance. You have read that time and again. You have heard it mentioned in your county society meetings—if you were there. You realized, naturally, that your various county and state societies' medical economics committees were "doing something about it." But what have you yourself done about it? Some things

you can hire done. Others you have to do yourself.

If this JOURNAL is to serve you, and the common cause of medicine and the public interest, it must speak the truth. That is essential to good public relations.

Let's go! Not all of us believe enthusiastically in what we have to sell to the public. Some of us are hazy as to what it is all about. Therefore many of us can't talk to our patients or to the public persuasively and convincingly. So we say: get some one to sell the idea for us. That's a step in the right direction, but it is only a step. *Your* services are involved; *you* have to make any voluntary plan work; not only do you have to render the purely medical service to the subscribers, but you also have to do it enthusiastically. Otherwise you are asking your Bureau of Medical Care Insurance, your Public Relations Bureau, and this JOURNAL to help sell a gold brick, not only to the public but to other physicians.

This is plain talk. But we are committed to a voluntary insurance plan and it must work by virtue of the wholehearted participation of all of us in it.

"The people do not want Federal medicine," says Mr. John R. Little.<sup>1</sup> "They only want what they have been told *will result from Federal medicine*. The pressure groups and the politicians cannot enact Federal medicine without the clear will of the people . . . . I suggest . . . you think only of what instrumentality you can supply which will satisfy the people's wants—an instrumentality which will be superior to anything politicians can offer. . . ."

It will be, but only if physicians make it so. This does not mean *some* of the physicians of the State; it means *all* the physicians, and the proper use of *all* public relations media we possess.

<sup>1</sup> California and Western Medicine, Vol. 61, No. 1, July, 1944, p. 12.

## The Voice of the Turtle

In his address to the A.M.A. in June, 1944,<sup>1</sup> President James E. Paullin said, in part,

"During the past year it has been observed that in attempting to present the point of view, as established by the House of Delegates, to many governmental agencies we have been met with the statement that the American Medical Association does not speak for the medical profession of the United States. The reason for this is that some state medical associations have been active in presenting to the public points of view opposed to the policies previously established by the House of Delegates. If the ethical principles and conditions of practice established by the House of Delegates are to be successfully supported, state and county medical societies should bring their differences here for discussion rather than place them before the public. In times such as this it is only by the development of complete unity and support that the views of the medical profession, which have been developed for the best interests of the public and for the advancement of medical science, can be made to prevail. If the purposes and ideals and desires for which we as a medical profession stand are worth while, then there should be the loyal support of every member of all organizations to see that they prevail. . . ."

We agree that there should be as much unity as possible in the medical profession;

but we seriously doubt that "complete unity" would be advisable even if it could be achieved. The views of the medical profession, as indicated by the large variety of resolutions introduced into the House of Delegates, do not represent by any means the views of many county societies.

There is a "loyal opposition" to the A.M.A. and we hope there always will be. When such a group ceases to exist, the plight of American medicine will be serious indeed. We doubt that this opposition is given the hearing and consideration by the A.M.A. which should be accorded it. If it were, there would be little reason for state medical associations to be "active in presenting to the public points of view opposed to the policies previously established by the House of Delegates." When such things occur, there is usually some reason for them. And one reason, which is very obvious, is that, as Parsons<sup>2</sup> says, the House of Delegates is not a truly representative body.<sup>4</sup> Furthermore, much honest disagreement exists as to whether the A.M.A. is fully conscious of public and professional opinion on many mat-



ters Being itself hesitant if not, until recently, obdurate in the matter of presenting the views of the profession to the public, it cannot blame its component units for being willing to do so Says the *Westchester Medical Bulletin*<sup>3</sup> of the 1944 meeting of the House of Delegates

"At a time when scores of thousands of American physicians, both on the home front and in military service, are asking for a vigorous, realistic leadership in medico social matters on the part of the A M A comparable to its undisputed leadership in the scientific field, the new president of the American Medical Association can recommend nothing better for doctors to do than to spend two hours each day speculating with their patients as to the allegedly horrible results of any change in the status quo

"At a time when medical journals throughout the country are appealing to their national organization for resolute leadership, when physicians in Congress leaders in the hospital field, and politicians and publicists friendly to organized medicine are calling with one voice for a sound, progressive national health and medical care program sponsored by the medical profession, the governing body of organized medicine offers nothing better than a reiteration, with minor changes in their wording, of a platform' adopted by the House of Delegates six years ago

The House of Delegates of the A M A, likewise, has taken no action of any kind toward liberalizing the procedures or the organic law of that organization, in such a way as to make it more responsive to the views of what we believe to be a majority of its own membership Such suggestions as the election

of delegates by direct popular vote of the membership in the various states, the provision of initiative and recall through the House of Delegates or by state associations, the establishment of a modern and effective machinery of public relations by the A M A, the abolition of the veto power now held by the Board of Trustees over any actions of the House of Delegates which require the expenditure of funds the proposal to require confirmation by the House of Delegates of the personnel of reference committees appointed by the Speaker of the House, the proposal to require the Board of Trustees to submit an annual budget to the House of Delegates for revision or approval, the proposal that the A M A repudiate its endorsement of that 'Achilles' heel of American Medicine,' the National Physicians' Committee—all these suggestions which have been made in various county and state medical journals throughout the country during the past year received not the slightest consideration by the House of Delegates We do not support all these suggestions but we believe they deserve consideration, in the light of the problems and trials ahead for organized medicine "

As long as the A M A fails to respond to the call, expressed by many societies and their publications, for active leadership in public relations and in other ways, just so long will the loyal opposition feel that it must go direct to the public, having no other choice

<sup>1</sup> J A M A 125 8 567 (June 24) 1944

<sup>2</sup> Westchester Med Bulletin (March) 1944

<sup>3</sup> Westchester Med Bulletin (July) 1944

<sup>4</sup> Indeed we strain a point to call this system indirectly representative

## Association of Military Surgeons of the United States

Addresses by the nation's three Surgeons General, the chief of the Veterans Administration, the Commanding General of the Second Service Command and New York City's mayor will highlight the Fifty-second Annual Meeting of the Association of Military Surgeons of the United States at the Hotel Pennsylvania, New York City, November 2-4, 1944

Other features of the meeting, which is being arranged under the direction of Association President Col Lucius A Salisbury and Col Charles M. Watson chairman of the convention and program committees, will be forum lectures, discussion panels, military and commercial scientific exhibits, and medical motion pictures

Expected to participate in the forums and discussions are Maj Gen Norman T Kirk, Surgeon General, U S Army, Admiral Ross T McIntire, Surgeon General, U S Navy, Surgeon

General Thomas F Parran, U S Public Health Service, Maj Gen David D W Grant, Rear Admiral Luther Sheldon, Maj Gen G Brock Chisholm, of Canada, Brigadier Generals Frank T Hines, James S Simmons, Charles C Hillman, Raymond W Bliss, Fred W Rankin, Hugh J Morgan, Stanhope Bayne-Jones, Dr Warren F Draper, U S Public Health Service, Dr Chester Keefer, of Boston, and Dr R E Dyer, National Institute of Health

Forum lectures will cover war surgery, chemotherapy, communicable diseases, neuropsychiatry, medical problems in theaters of operation, dental rehabilitation, and equine encephalitis

Topics for discussion panels, which will be integrated with the lectures are "War Wounds, Burns, and Fractures," "Neuropsychiatric Problems," "Treatment and Prevention of Venereal Diseases," "Penicillin and Sulfonamide Therapy,"

"Orthopaedic and Reconstruction Therapy," "Neurosurgical Problems," "Tropical Diseases in the Army and Navy," and "Aviation Medicine."

Separate discussions have also been arranged for dental, veterinary, sanitary, and medical administrative corps officers.

Col. Frederick H. Foucar, of the Second Service Command Laboratory, is chairman of the committee arranging the scientific exhibits, which will include material from Army, Navy, and Veterans Hospitals, the Carlisle Barracks Medical Field Training School, many medical depots, and the Office of the Surgeon General of the Army. All available space for the technical exhibits of commercial firms was disposed of months ago.

The annual banquet, which is to be addressed by a prominent speaker representing the Army,

will be held on November 3, and an entertainment is planned for the night of November 2. The banquet speech and the speeches of the Surgeons General and the Veterans Administrator will be broadcast nationally, while "spot" broadcasts will probably be made by several of the principal forum speakers.

Other committee chairman for the meeting are: Brigadier General Ralph S. DeVoe, (MC), reception; Lt. Col. Howard F. Baer, (SnC), entertainment; Lt. Col. Ralph E. Ladue, (AUS), reservations; Col. George W. Hinman, Jr., public relations; Mrs. Norman T. Kirk (honorary); and Mrs. Lucius A. Salisbury, women's hostess.

The registration desk will be open November 1. Lt. Col. R. E. Ladue, 52 Broadway, New York 4, New York (telephone HAnover 2-5200), should be notified of any difficulty encountered in securing rooms through the Hotel Pennsylvania.

### Competition for Prize Essays

The Merrit H. Cash Prize and the Lucien Howe Prize will be open for competition at the next Annual Meeting of the Medical Society of the State of New York.

The Lucien Howe Prize of \$100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The Merrit H. Cash Prize of \$100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York, who at the time of the competition are residents of New York State.

The following conditions must be observed:

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the Committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York "to be published as it may direct."

All essays must be presented not later than February 1, 1945, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 292 Madison Avenue, New York 17, New York.

CHAS. GORDON HEYD, M.D., *Chairman*  
Committee on Prize Essays

## *Symposium: The Treatment of Special Infections*

### THE TREATMENT OF INFECTION WITH PARTICULAR REFERENCE TO THE PERITONEUM

SAMUEL C. HARVEY, M D, New Haven, Connecticut

IT IS the purpose of this discussion to consider the common infections which occur in wounds and the logical basis for their treatment, with particular reference to those of the peritoneum. The time at one's disposal will make this presentation both superficial and dogmatic, but it will serve its purpose if it recalls to your minds certain fundamental things about "surgical infections" and arouses a degree of scepticism as to the value of the substitution of "chemotherapy" for procedures well established by long experience.

The infectious agents with which the surgeon contends are ordinarily barred from entrance into the body, and therefore from the production of infection, by the skin and the mucous membranes. It is only when this protective envelope is breached that such organisms proliferate and cause an inflammatory reaction on the part of the host. Some bacteria require a relatively minor damage to this mechanical barrier and, once past it, may quickly get out of control, frequently producing not only a localized but a spreading and even a generalized infection. These are customarily spoken of as having a high degree of virulence and, for the purposes of this discussion, may be termed obligate pathogens. These are usually certain of the hemolytic streptococci and staphylococci. Other bacteria require for their entrance and multiplication more specific and unusual conditions, and more rarely lead to spreading and generalized infections, although their lethal effect in some instances may not be the less deadly. Such are the anaerobes, and most commonly of all certain cocci, particularly the nonhemolytic ones, and gram negative bacilli, for the most part of the colon group. All of these may be appropriately spoken of as facultative pathogens.

The chance of the obligate pathogens being present in or about any isolated and healthy individual is relatively small, but such isolation is rare, and under the frequent contacts of both civilian and military life the possibilities of ex-

posure to these are many. Moreover, the penalty paid for this type of infection in the individual is so serious and the possibility of spread when conditions are right, as in a congregation of wounded patients in a hospital ward, is so great that the precautions against these organisms must be as complete and perfect as conditions will permit. In fact, it is largely to prevent such infections that our detailed ritual during operations has been developed, as well as the technic of the handling of open wounds, which is too often carelessly and ineffectively carried out.

When these precautions are adequately maintained, the transfer of the obligate pathogen directly from wound to wound should not occur and rarely does. Indirectly, from dust and from the upper respiratory tract of those who are infected or from "carriers," the possibility of infection is always present and is increased directly in proportion to the time that the wound remains open and exposed, and to the number of individuals coming in contact with the patient. Therefore, in a severe burn with a large area of skin destroyed, which remains "open" over weeks and even months, the chance of its becoming infected sooner or later with an obligate pathogen is great, while in the wound made and closed in the operating room this occurrence should be rare and then due to a detectable break in the technic.

The facultative pathogens, on the other hand, are always in and on the individual. The skin carries not only a transient flora which may be removed by a thorough cleaning, but a resident one which lives in the sweat glands and hair follicles and cannot be destroyed by any procedure short of the destruction of the skin itself. The latter are, therefore, always present in any wound, and where there is considerable necrotic tissue, as in a blood clot, may produce a relatively mild local infection. Organisms of greater pathogenicity may, of course, be present also in the skin—that is to say, resident there when actual infection exists, as in impetigo or folliculitis, and under these circumstances may be of sufficient virulence when introduced into the open wound to cause serious and even spreading and generalized infection. These are, to a degree, obligate pathogens and are usually hemolytic cocci.

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 11, 1944. Part of a symposium on "The Treatment of Special Infections."

From the Department of Surgery, Yale University School of Medicine, New Haven, Connecticut.

• The transient contaminators of the skin more commonly come from contamination of it with the secretions of the upper respiratory tract and buccal mucous membranes, or with the excretion of the intestine, the feces. Where actual infections or "carrier states" are present in the former, obligate pathogens may be present; in the latter rarely so. Much more commonly they are facultative pathogens and cause infection only when the right conditions are present.

The obligate pathogens possess a facility for living and proliferating within living tissue; the facultative pathogens require the presence of dead tissue, although when once established they may, by their own action and the response of the host, cause further necrosis and thus become self-perpetuating. The newer chemotherapeutic agents interfere with the enzymatic processes essential to the growth of the bacteria, and therefore are effectual with the obligate group, while the antiseptic agents which are protein coagulants kill living cells, produce necrotic tissue, and thus form a favorable basis for the growth of the infecting organisms. The obligate pathogen is, then, in short, an organism which grows within the body and is sensitive to the antibiotic agents, while the facultative pathogen is dependent upon dead tissue for its persistence and in general under these conditions is not responsive to these agents.

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and extension of the organisms. As this takes place a process, similar to cellulitis in soft tissues elsewhere, occurs in the intestinal wall beneath the peritoneum, leading to inhibition of peristalsis, distension, and all the manifestations of the so-called adynamic ileus. This, with the continuing formation of putrid peritoneal fluid and the absorption of the products of broken-down protein, as well as the loss of fluid into the peritoneal cavity, leads in the more fulminating instances to peripheral circulatory failure and death, while the same end is reached more slowly in others by reason of what is essentially intestinal obstruction. The facultative pathogen produces in this way the necrotic medium in which it grows, and any measures which damage the peritoneum and increase the exudate favor its development, while those taken to decrease contamination and the available media for the growth of organisms lead toward the overcoming of the infection or at least the confinement of it to limited areas.

It is obvious that the first indication is the shutting off of the source of infection or, if this is not possible, the exteriorization of it by establishing drainage from that point out of the peritoneal cavity. Second, it is important to evacuate as much of the exudate as can be done without additional trauma to the peritoneum. This is usually accomplished inadvertently when there is a large quantity present, when the peritoneum is opened, and when the accumulation is still localized, during the limited exploration that is necessary to reach the source of the contamination. This removal of fluid allows the peritoneal surfaces to collapse together and become adherent, and provides the best opportunity for walling off the infection, at times forming abscesses which may be drained later when they are well developed. This is not a "toilet" of the peritoneum, but a recognition of the fact that the opening of it and a gentle exploration, just sufficient to permit of the control of the source of the contamination, at the same time decompresses the abdominal cavity and leads to the clearance of fluid which would serve as a source for the growth of the facultative pathogens. In no instance should adhesions be separated or exploration carried out with a view to removing the fluid *per se*, for the damage done is greater than the benefit acquired.

When the superfluous fluid has escaped, the intestines fall together and against the parietal peritoneum, frequently leaving pools of fluid in the pelvis, beneath the liver, and under the diaphragm as well as smaller pockets elsewhere. As Yates<sup>1</sup> showed, many years ago, it is impossible to maintain continuing drainage of the peritoneal cavity, for the intestines rapidly become

adherent about the drains and wall them off. Perhaps the best policy is to drain the source of contamination if this is not satisfactorily controlled or if the soiling has been a gross one so that a focus of contamination persists, and to drain walled-off areas which are potential abscesses. When fluid continues to work its way out through the peritoneal incision at the close of the procedure, drainage, which will admittedly be temporary, for a few hours only, may serve further to decompress the abdomen, but otherwise the peritoneum should be closed, with drainage of the abdominal wall only. This practice corresponds closely to that found to be preferable in dealing with infected bursal spaces such as the knee joint, and in principle does not differ from the well recognized methods employed in treatment of infection of the pleura.

Most of what has been said so far concerning the treatment of peritonitis will be accepted, I imagine, without too great disagreement. Much more controversial is the employment of chemotherapy. Antiseptics in wounds had their day so long ago that but few surgeons recall their use, and they were discarded because of the damage to the tissues, which favored rather than prevented further infection. As in wounds, the advent of the "antibiotics"—the sulfonamides and penicillin and similar agents—has enlisted the interest and aroused the enthusiasm of many of us. In considering these it is important to keep in mind that they do not destroy organisms—in other words they are not bactericidal—but interfere with their metabolic processes so that they do not multiply—that is to say, the effect is bacteriostasis. Under these circumstances, when the organisms are within viable tissues their destruction by the normal phagocytic and antibacterial mechanisms is accelerated. These agents are then most effective when the bacterium is, as the saying goes, "invasive" and least so where it is in necrotic tissue or in putrid exudates.

Without doubt, in many instances of fulminating peritonitis an obligate pathogen is present although obscured by the overgrowth of other members of the intestinal flora, and the systemic use of sulfonamides or penicillin will check its progress. When the infection is by facultative pathogens which are for the most part relatively unsusceptible to the antibiotics, particularly in the presence of a disintegrating protein exudate, one must rely upon the mechanical procedures for aiding in the walling off and control of the infection. Application of one of the sulfonamides locally within the peritoneal cavity seems, then, illogical and not without its dangers. The least harmful one is the most soluble and most rapidly absorbed, namely, sulfanilamide, and therefore

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are not susceptible and the infections caused by them are not amenable to penicillin therapy. These include the typhoid-dysentery-colon group, pyocyanus, proteus, and Friedlander infections, as well as infections with the tubercle bacillus, monilia, malerial parasites, and others.

As to administration of the drug, there are a number of differing opinions as to dosage and routes of administration. We have no arguments, pro or con, with these, but we insist on effective, nonwasteful doses and effective routes of administration. It has been shown that penicillin loses its effect when in contact with the acid gastric contents and in the rectum, so these routes are not used. Duodenal instillation by tube or enteric coated capsule has been tried but is unreliable.<sup>2</sup> Subcutaneous administration has been used, but the irregularity of absorption and the local pain make this undesirable. To be effective penicillin is administered either intramuscularly or intravenously or applied directly to the wound. Except in the very acutely ill when we use intravenous therapy, we use intramuscular injection routinely. The ease of administration by nursing personnel and the high efficacy of the route as compared to the others have led us to this decision.

The dry penicillin powder is put into solution in sterile isotonic solution of sodium chloride or 5 per cent glucose solution. For convenience of injection the usual solution is made so that each cc contains 5 000 Oxford units, although other strength solutions may be used. For local application the usual strength is 250 units per cc, although this may also be varied.

Because of the very rapid excretion of the drug, injection must be made either continuously or, at the longest interval, about every two hours in intravenous therapy, or about every three or four hours in intramuscular therapy. It is known that as much as 50 to 60 per cent of the total injected dose may be detected in the urine after any form of therapy, and this occurs within two to four hours after injection.

For local application to wounds, the solution of 250 units per cc is used to saturate gauze packs which are inserted into the wound once daily. We have never used any powder form of the drug for local use, but this can be done by diluting the penicillin in some powder vehicle and dusting this into the wound.

The question of dosage is still under considerable debate, with estimates varying through a large range. We have determined an effective schedule of dosage for the various infections and present it as effective doses rather than minimal or maximal doses. The dosage of any particular case depends on the bacteriology of the wound or disease, and on the condition of the patient. The

effective level for the most susceptible infections, such as those caused by the beta hemolytic streptococcus and pneumococcus, has been determined to be in the neighborhood of 90,000 to 120,000 units per day. The staphylococcus requires a dose of about 200,000 units per day or higher. The dosage may be suggested by *in vitro* tests, comparing the activity of penicillin against the infecting organism to that of penicillin against a known test organism. In the very acutely ill patient, however, one tends to use a somewhat higher dose than the one indicated, later dropping to the usual dose when improvement is noted, particularly in staphylococcal and clostridial infections where there is some danger of the organism's becoming penicillin-resistant.

As concerns the toxicity of penicillin, it can be stated that no serious complications or deaths have been encountered to date. Penicillin as it is delivered to us today has no pyrogenic matter in it, but is at best only about 50 per cent pure, so what reactions have been noted may perhaps be caused by the impurities rather than by the penicillin itself. In a few cases a low fever has been noted in the first three to five days. This never exceeds 1 or 1½ degrees and never upsets the course of the patient, and recedes of itself. Urticaria has been encountered anywhere along the course of treatment and as long as nine days after treatment. This may be mild or severe and responds somewhat to the usual measures but usually persists three to five days and disappears regardless of the stopping or continuing of penicillin. Thrombophlebitis has been encountered, chiefly at the site of intravenous injection with concentrated solution of penicillin. We suspect that much of this is directly associated with poor venipuncture technic rather than with the drug. Other minor transitory reactions have been seen very occasionally, but never have been the cause of alarm: headache with flushing of face and faintness, unpleasant taste, tingling of the testes, transient eosinophilia, and, rarely, slight rise in the nonprotein nitrogen. These are all so mild and evanescent as to be disregarded as serious complications. Burning and pain at the site of intramuscular injection is rather common and varies greatly with different lots of the drug. Much of this can be eliminated by filtration through a Seitz filter. Most of these reactions are very inconstant and do not occur with all lots of the drug, so in many cases we feel the impurities present in the drug are responsible.

Systemic diseases without external manifestations, such as pneumonia, bacteremia, gonorrhea, and cellulitis, are treated by systemic therapy alone with dosage and duration of treatment appropriate to the type of infection. Infections of the body cavities, such as the chest and joints,

may be treated by injection of penicillin directly into the cavity involved, although systemic penicillin is usually indicated for a few days. Extensive wounds and compound fractures present a different problem than most other infections. It is quite obvious that soft tissues which are infected but which have good blood supply can be adequately treated with penicillin without extensive surgery. However, it is a proved fact that a wound cannot be sterilized if infected dead bone is present or foreign bodies, such as pieces of clothing, are left in the wound. In these cases adequate surgery must be done to remove this foreign and dead matter and the wound so revised that local penicillin may be adequately used. In such a program of treatment systemic therapy is employed to clear up and protect against the infectious process about the wound, or spreading from the wound in tissue planes or lymphatics. Local application of penicillin is then employed to take care of the localized infection. Usually a combination of systemic plus local application is the plan of treatment.

The general condition of the patient is evaluated and any necessary treatment is given to put the patient in optimal condition for operation. Penicillin is then started and continued for from two to five days preoperatively. Débridement in the acute compound fracture is performed without delay when the patient's general condition will permit, but penicillin therapy may be instituted while the patient is being prepared for operation. Operation is then performed and the necessary surgery is done, pus is drained, dead bone, sequestra, and foreign bodies are removed, and reduction of a fracture may be accomplished. The operative site is packed loosely open, with adequate drainage provided. The wound is not dressed, usually, until three to six days later, but systemic penicillin is carried on during this period. Early dressing encourages bleeding and organisms thrive on the clots, so this is avoided. If after dressing there is no reaction about the operative site and all exposed cortical bone is covered, then systemic penicillin is stopped and the wound is dressed once daily with local penicillin. This is continued until the wound is healed or a secondary closure can be done.

The patient with the acute compound fracture is usually a good surgical risk at the time of his injury. Shock and loss of blood may lower his general resistance, and this is certainly true if infection develops. With severe infection and especially with chronic sepsis in which the metabolism has been upset, other factors enter into our care of the patients, since they are found to heal their wounds and fractures slowly and are, in general, poor surgical risks. These patients

with chronic sepsis have often had a profound upset in the general body economy, as evidenced at times by great weight loss, anemia, lowered blood pressure, and general debility. They are almost invariably in negative nitrogen balance. Elman<sup>3</sup> and others have shown the importance of positive nitrogen balance in maintaining and restoring good general health. It can readily be shown that healing of wounds, both soft-tissue and bone, depends in large measure on the positive nitrogen balance, particularly in those cases where the usual protein stores have been depleted by long-continued sepsis. Dietary measures, even supplemented by parenteral hydrolysates and amino acids, do not quickly make up the deficiency, since excretion rises with increased intake.

The reason for this was noted in another finding. We have known that there is progressive anemia in chronic sepsis, but the extent of this was not appreciated fully. The routine laboratory tests usually indicate the deficiency, but not to the extent it is really present, since we have been determining only the percentage composition of blood rather than the total circulating amounts present; and, in the final analysis, this is the important thing. Thus a patient's hemoglobin, reported to be 13 Gm. per 100 cc., is deficient, but not alarmingly so. However, if his blood volume is determined and is found to be short, then the deficiency may be very great. Thus, if a patient's blood volume is 5,000 cc., when it should normally, for him, be 7,000 cc., his total circulating hemoglobin is 650 Gm. instead of the 1,050 Gm. it should be. Also, other elements of the blood would probably be deficient to a similar extent. Thus, without knowing the blood volume we cannot estimate the true condition of the patient.

As a matter of fact, in patients who have been septic over a long period of time diminished blood volume is a constant finding, along with a severe hemoglobin deficiency. This hemoglobin deficiency must be restored to normal before protein is returned to the normal storehouses. Therefore, even in a patient showing a positive nitrogen balance, healing is slow or absent until blood hemoglobin is restored.

The blood volume may be determined by the Evans Blue Dye method described by Greger<sup>4</sup> and others. This involves the injection of a known quantity of the blue dye, withdrawing samples of the blood, and determining the concentration of dye in the plasma. This is readily done by colorimetric determination on the plasma. From this the quantity of plasma can be determined and, by use of the hematocrit, the total blood volume may be calculated. Normal volume is calculated as 9 per cent of the usual body



weight in kilograms. The extent of the deficiency can thus be noted.

In the normal person decrease in blood volume such as that caused by acute hemorrhage and other causes is rapidly made up by inflow of fluid from the fluid held in the intercellular spaces. Quite apparently, this normal action is interfered with in some way in chronic sepsis, where an almost constant finding is an increased interstitial fluid volume accompanying the decreased blood volume as noted above. The exact cause for this and its significance is not well understood, but it is evidently an integral part of the chronic sepsis, and is probably another evidence of the upset in the total metabolism of the patient. With restoration of blood volume, control of sepsis, and clinical improvement of the patient the interstitial fluid volume is found to return to normal. Interstitial fluid volume may be determined by the thiocyanate method as described by Crandall and Anderson<sup>5</sup> and others, somewhat like the blood volume determination by colorimetric method. More will be learned about this interesting phase of sepsis as more work is done on it. Incidentally, this increase in interstitial fluids masks somewhat the true weight loss in sepsis.

It is obvious, then, that the great immediate need in these chronically septic patients is either whole blood or hemoglobin. Whole blood can be supplied by transfusion as usual but it becomes more apparent that we must revise upward our ideas of the amounts needed if we are to do the most good. If the fluid volume is normal but the hemoglobin is low, this can be remedied by giving resuspended red cells which are ordinarily lost in the process of making plasma. Substitutes for hemoglobin do not work out so well, so at present the red blood cell itself is the best source of hemoglobin.

When blood volume and hemoglobin lack is made up and sepsis is controlled by penicillin and other measures, the patient is a much better operative risk than he was before. Then with a high calorie, high protein diet, the nitrogen balance becomes strongly positive and protein is stored in the muscles and other storehouses, as evidenced by weight gain and increase in muscle mass. From then on wound healing is rapid and progressive to final healing.

In the treatment of the acute compound fracture penicillin plays an important role, that of an effective antibacterial agent. Penicillin therapy cannot replace the usual treatment and must be accepted as a mere adjunct in the management of each individual case. Good first aid consisting of morphine, adequate splinting, and blood plasma, must be insisted upon. The patient is made ready for débridement as soon as possible. The

details of this operation do not need discussion, but it should be emphasized that the débridement should be carefully and adequately performed.

All foreign bodies and devitalized structures should be removed and considerable discretion should be exercised in determining the completeness of the débridement. A needless sacrifice of bone fragments and soft structures must be avoided if the surgeon is reasonably certain that the circulation is adequate. A carefully performed débridement calls for a thorough mechanical cleansing of the wound as well as a constant irrigation with sterile water throughout the operation. The fracture should then be reduced, but internal or external fixation must never be used. Closure of the compound fracture is strictly forbidden. Vaseline gauze should be used to protect the wound, but it must not plug the wound sufficiently to interfere with drainage should infection subsequently develop. The reduction is then maintained by the application of a plaster of paris cast or traction.

It is our practice to débride the acute compound fracture as soon as possible. Penicillin therapy is started prior to operation. Morphine and plasma are used to combat shock. The importance of blood transfusion cannot be emphasized too greatly, for these patients have usually lost blood. We routinely administer blood and plasma postoperatively to maintain the patient's blood volume and nutritional status, and we feel that this decreases the incidence of infection. The wound is not closed. The unpadded cast is not used. The severe case, particularly if the fracture is markedly comminuted and associated with excessive soft-tissue trauma, is treated by skeletal traction following the débridement, as this permits frequent inspection of the extremity. With the benefit of penicillin, it is believed that even the case which does not come to surgery until six to twenty-four hours after the time of the injury may be reasonably expected to heal without infection.

The septic compound fracture needs adequate drainage. There are frequently associated foreign bodies and sequestra. The septic patient is not a good surgical risk. These patients do well with penicillin, a high calorie and protein diet, and repeated blood transfusions. Within a few days the infection begins to subside and the patient's general nutritional status has improved to the extent that surgery is permissible. Adequate drainage is then established and the wound is carefully explored and all foreign bodies and sequestra are removed. Sequestra will prevent wound healing, but with the use of penicillin and a well-planned preoperative program, the patient may quickly be made ready for a safe perform-

ance of necessary surgery. The septic compound fracture with deformity may occasionally be reduced, but this procedure should be confined to selected cases. The morbidity may be materially lessened if reduction can be accomplished without waiting for complete wound healing. The wound should never be closed following sequestrectomy, although secondary closure may be permissible in the occasional case.

As we see the orthopaedic casualties returned to this country, we are impressed with the fact that our major problem is the management of the compound fracture. Efficient first aid, plasma, blood transfusions, the sulfonamides, and the open-wound method of treatment have served to minimize infection. More important, however, these principles have saved both life and limb in many instances. We have been convinced that the severity of infection has been in direct proportion to how early and how effectively the above dictates of treatment had been instituted. It has also been our conclusion that the present low mortality and morbidity rate in compound fractures must be attributed to the open-wound method of treatment.

Our experience in the use of penicillin leads us to believe that it is a more effectual antibacterial

agent than the sulfonamides, in both the prevention and cure of infection. It has likewise proved valuable in the prevention of reinfection following reconstructive operative procedures. This factor has made it possible to perform major surgery sooner after complete wound healing than had been the case with the use of the sulfonamides. Penicillin therapy must be recognized and accepted as an adjunct only in the management of a surgical problem. Penicillin cannot, and therefore it should not be expected to replace a well-planned surgical program. Further clinical and experimental studies are needed for a more complete evaluation of the usefulness of penicillin.

In conclusion, penicillin plays the role of an effective antibacterial agent in the treatment of compound fractures, but only as an adjunct to a well-planned surgical program.

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## THE PROPHYLAXIS AND THERAPEUSIS OF CLOSTRIDIAL INFECTIONS (GAS GANGRENE)\*

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SINCE 1939 we have been intensely interested in experimental "gas gangrene." We have studied over 1,400 dogs in which the disease has been experimentally produced. It is not the purpose of this paper to give a complete report upon all phases of our work at this time, nor is it possible to do so, as the studies are still in progress. A variety of agents have been tested, namely, roentgen therapy,<sup>1,2</sup> subcutaneous and

intramuscular oxygen,<sup>3</sup> sulfadiazine, sulfathiazole, sulfanilamide, penicillin, and pentavalent antitoxin. This report will be confined to the aforementioned sulfonamides, penicillin, and pentavalent antitoxin.

We have found the dog a very satisfactory animal for the study of experimental clostridial infections. One not infrequently finds the disease arising in this animal as a result of its normal environment. The experimental disease in dogs more closely simulates the disease as seen in humans than it does in the smaller animals. The infection tends to remain localized in the involved limb, with an increasing degree of systemic reaction, culminating in a toxic death in 93.4 per cent of a series of 377 untreated control dogs in which the disease had been established.

Our method of producing the disease, while not analogous to that occurring in humans, is free of complicating and variable factors such as anesthesia and surgical trauma. We are consequently enabled to evaluate the efficacy of any particular therapeutic agent as balanced against

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the resistance of the host and the virulence of the causative organism.

A study of the pathology of 69 of these dogs<sup>1</sup> further confirms our opinion that the disease as produced presents a consistent picture. The disease in all control animals was severe according to the degree of injury occurring at the local site of inoculation, in the cardiac muscle, and in the liver, in the order named. In most of the treated animals subjected to pathologic study the inoculated site showed a remarkable repair of the previously damaged muscle. The heart showed an occasional area of necrosis with good organization. In general the liver was undamaged. The kidneys in both the control and treated groups of dogs were remarkably free of damage.

## Experimental

**Infectious Agents.**—The infectious agents were virulent cultures of *Cl. perfringens*, *Cl. septicum*, *Cl. novyi* (two strains), and *Cl. sordellii*, employed either singly or in combination. The combined clostridial inocula, in addition, contained a strain of *Staphylococcus aureus*. Douglas medium<sup>5</sup> containing chopped beef heart and sealed with a vaseline plug was used for culture and storage of the clostridia. The staphylococcus culture was grown in plain Douglas broth.

**Inoculation.**—The amounts of the inocula for the various organisms were as follows:

Approximate Number of Vegetative  
Organisms and Readily Germinat-  
ing Spores

The mixed inocula contained equivalent fractions of the individual inocula and *Staph. aureus* in the ratio of 1:20. This mixture of cultures produced such a great increase in virulence that the amount of injection had to be reduced to 0.03 cc., which was one thirtieth of the size to be expected from simple summation of the individual inocula. Subsequent studies proved that the presence of *Staph. aureus* was not responsible for this increase in virulence.

The amounts of the various inocula were determined from a series of standardizations on dogs after preliminary standardization on guinea pigs. The inocula were adjusted to bring about death in a high percentage of the control dogs, without producing an overwhelming infection which would not respond to prophylactic or therapeutic treatment. The organisms were grown in pure culture and, for the mixed inocula, combined just before the inoculations were made. All inoculations for dogs were made with unwashed and undiluted culture. Prior to the injection, the

inoculum was mixed with one tenth of its volume of 1:1,000 adrenalalin chloride. A clipped area on the right hind leg was sterilized with iodine and alcohol, and the injection was made deep into the thigh muscles by passing the needle down until bone was encountered.

**Bacteriologic Verification of Infection.**—In the infections produced with the individual clostridia, pure cultures of the inoculated organisms could be isolated from the wound fluids at will. The recovery of the causative organisms from the infections produced by a mixed inoculum was more complex. The difficulties of separating such closely related organisms are enhanced by the fact that they apparently form a mixed colony growth, that *Cl. perfringens*, the most easily cultured of the group, tends to overgrow the agar plate, and that one or more species in a mixed infection may be manyfold more numerous in any particular area of the infection. In the earlier experiments with mixed inocula not all of the organisms of the mixture could be recovered from a single sample of wound fluid. However, later work has shown that these failures were due to inadequate bacteriologic methods. At the present time, with the application of heat shock to the wound fluid, recovery of *Cl. novyi* and *Cl. perfringens* from a mixed infection of the two organisms has been routinely accomplished.

## Prophylaxis

**Drug Administration.**—All treatments were systemic and the drugs were administered intravenously just prior to inoculation. The definitive agents employed were sulfadiazine, sulfathiazole, and sulfanilamide. Penicillin, in a single pilot experiment, was used prophylactically against *C. novyi*, but this agent was largely reserved for experiments in therapeutics.

Sulfadiazine was administered as the sodium salt in a 5 per cent solution. The initial dose was 3 cc. (0.15 Gm.) per kilo of body weight and additional amounts were administered in order to maintain the blood concentrations as nearly as possible between 15 and 20 mg. per cent for a three-day period. No supplementary dosage by mouth was necessary to maintain these levels. Sulfathiazole was administered intravenously as the sodium salt in a 5 per cent solution, but was supplemented by oral doses of the free acid to maintain blood levels at 15 to 20 mg. per cent. The initial intravenous dose of the sodium salt was 4 cc. (0.2 Gm.) per kilo of body weight. The initial oral dose was 0.5 Gm. per kilo of body weight administered approximately one hour after the intravenous dose. The maintenance dosage was both oral and intravenous. Sulfanilamide was administered per se in an 0.8 per cent solution and supplemented with oral doses. The

TABLE 1.—PER CENT TEN-DAY SURVIVAL OBTAINED IN PROPHYLACTIC STUDIES—25 ANIMALS PER GROUP

Prophylactic Agents	Cl. perfringens		Cl. septicum		Cl. novyi		Cl. sordellii		Mixed Inoculum I	
	Per- cent- age	P*	Per- cent- age	P	Per- cent- age	P	Per- cent- age	P	Per- cent- age	P
Sodium sulfadiazine	92.0	$2 \times 10^{-9}$	72.0	$2 \times 10^{-9}$	4.0	1.00	80.0	$2 \times 10^{-4}$	88.0	$2 \times 10^{-4}$
Sodium sulfathiazole	44.0	$3 \times 10^{-4}$	28.0	$2 \times 10^{-3}$	0.0	0.31	32.0	$2 \times 10^{-2}$	80.0	$2 \times 10^{-4}$
Sulfanilamide	20.0	0.37	0.0	1.00	0.0	0.31	40.0	$4 \times 10^{-3}$	48.0	$4 \times 10^{-4}$
Controls	13.2	...	0.0	...	4.0	...	8.8	...	6.6	...
Number of control dogs	129	...	31	...	25	...	34	...	30	...

\* P = probability of chi square value.

initial intravenous dose was 25 cc. (0.2 Gm.) per kilo of body weight and the succeeding intravenous and oral doses were adjusted to maintain the blood levels at 15 to 20 mg. per cent for the three-day treatment period.

**Blood Levels.**—Blood levels were taken on each dog, usually before and after each drug administration to provide maximum and minimum levels. Frequent intervening blood levels were taken. On the average fourteen to sixteen levels were taken on each dog over the three-day treatment period. Rapid changes in a dog's toxicity with consequent differences in hemoconcentration and elimination increased the difficulties in maintaining constant blood levels. Analysis of the blood concentration curves indicates that sulfathiazole was most difficult to maintain at the desired levels while sulfadiazine was the most easily controlled.

**Results.**—The three-day treatment period was followed by seven days of observation, making an experimental period of ten days. Survivals were based on that period. Groups of 25 dogs were treated with each of the three sulfonamides against each of the four clostridial species, and an untreated group of 25 dogs was used as a control for each species. With Cl. perfringens there was a 12 per cent\* survival of the controls; with Cl. septicum there were no survivals; with one strain of Cl. novyi there was 4 per cent survival, and no survivals with the second strain. Cl. sordellii infection allowed a 12 per cent survival, and the mixed clostridial infection of Cl. perfringens, Cl. septicum, Cl. sordellii, plus Staph. aureus, but without Cl. novyi (Mixed Inoculum I), allowed a 6.6 per cent survival.

Sulfadiazine proved to be the most effective prophylactic agent, with 92 per cent survival against Cl. perfringens infection, 72 per cent survival against Cl. septicum, 80 per cent against Cl. sordellii, but only 4 per cent against Cl. novyi. Sulfathiazole was next in effectiveness, with 44 per cent survival against Cl. perfringens, 28 per cent survival against Cl. septicum, 32 per cent against Cl. sordellii, and with no survivals against

Cl. novyi. With sulfanilamide, the survival against Cl. perfringens was 20 per cent, 40 per cent against Cl. sordellii, and zero against Cl. septicum and Cl. novyi (Table 1).

Cl. novyi proved extremely resistant to the action of the sulfonamides.<sup>6</sup> A second strain was used to check this resistance and in this case there were no survivals. When the inoculum of the first strain was reduced from 0.5 cc. of culture to 0.15 cc., sulfadiazine produced a 36 per cent survival in 25 dogs. However, there was a control survival with this inoculum of 20 per cent.

Prophylaxis was tested with the three sulfonamides against Mixed Inoculum I of Cl. perfringens, Cl. septicum, and Cl. sordellii, made up of equivalent fractions of their individual inocula and Staph. aureus in a ratio of 1:20 of culture volume. The inoculum with this mixture was reduced to one thirtieth of the size expected from the summation of the individual inocula, or 0.03 cc. of mixed culture. Sulfadiazine effected an 88 per cent survival, sulfathiazole increased its effectiveness to an 80 per cent survival, and sulfanilamide gave a 48 per cent survival (Table 1).

A pilot experiment in which 7 dogs were treated prophylactically with penicillin against Cl. novyi produced a 71.4 per cent survival. The penicillin dosage, in this experiment, varied from 300 units to 2,000 units per kilo. It is probable that the lower dosage was inadequate.

## Therapeusis

Except for a pilot experiment in which penicillin was used against Cl. novyi, mixed inocula were the infectious agents used in the therapeutic phase of the work. For therapeusis with the sulfonamides, the sulfonamide-resistant Cl. novyi was omitted from the mixed inocula; otherwise, the mixed inocula included Cl. perfringens, Cl. septicum, Cl. sordellii, Cl. novyi, and Staph. aureus (Mixed Inoculum II).

In all the therapeutic experiments, inoculation was made at least three hours before treatment was initiated. In certain of the experiments this interval between inoculation and treatment was prolonged to six- and twelve-hour periods, with a resulting increase in the severity of the infection and in its resistance to the definitive agents.

\* Over a four- to five-year period 129 control dogs inoculated with Cl. perfringens yielded a 13.2 per cent survival. A total of 34 control dogs inoculated with Cl. sordellii gave a survival of 8.8 per cent.

TABLE 2.—PER CENT TEN DAY SURVIVAL OBTAINED IN THERAPEUTIC STUDIES—25 DOGS PER GROUP

Therapeutic Agents		Con-	Mixed Inoculum I		Mixed Inoculum II		Remarks
			Per cent age	P*	Per cent age	P	
Sodium sulfadiazine	Begun three hrs after inoculation	Con-	48 0	$4 \times 10^{-4}$			
	tinued seventy two hrs						
Penicillin	Begun three hrs after inoculation	Con-			100 0	$2 \times 10^{-4}$	
	tinued seventy two hrs						
Antitoxin	Begun three hrs after inoculation	Com			88 0	$2 \times 10^{-4}$	
	pleted in eight hrs						
Penicillin	Begun six hrs after inoculation	One dose			88 0	$2 \times 10^{-4}$	
	sodium sulfadiazine three hrs after in-						
	oculation						
Penicillin	Begun twelve hrs after inoculation	One dose			8 3	$4 \times 10^{-4}$	Based on 12 dogs
	sodium sulfadiazine three hrs after in-						
	oculation						
Antitoxin					92 0	$2 \times 10^{-4}$	
Antitoxin					84 0	$2 \times 10^{-4}$	
Penicillin plus anti-					88 0	$2 \times 10^{-4}$	2 Dogs died an ana-
toxin							phylactoid death
Controls			6 6		0 0		
Number of controls			30		99		
Total number of experimental dogs	587 (Tables 1 and 2)						
Total number of control dogs	353 (Tables 1 and 2)						
	945						

\* P = probability of chi square value

**Definitive Agents**—The definitive agents for the therapeutic studies were sodium sulfadiazine, penicillin, and pentavalent gas gangrene antitoxin, or combinations of these drugs. In the antitoxin and penicillin experiments, sodium sulfadiazine was sometimes used as an auxiliary agent. The purpose of the auxiliary sulfadiazine was, first, to introduce a factor which would act directly on the invading organisms when antitoxin was the definitive agent, and, second, in order to simulate more closely battlefield conditions, where the wounded would have received prophylactic treatment with sulfonamides before reaching the base hospital for the definitive treatment.

**Dosage**—The dosage for penicillin therapy was established at a rather high level after lower dosages had proved unsatisfactory in the pilot experiments. The first two doses, given at a two-hour interval, were 2,000 units per kilo of body weight, the third through seventeenth doses were 1,000 units per kilo of body weight, and the eighteenth through the twenty-fourth doses were 600 units per kilo of body weight. In experiments in which the infection was allowed to progress for more than three hours before treatment, the 1,000 unit per kilo dose was maintained from the third through the final dose. The total penicillin dosage for a treatment, therefore, was either 23,200 units or 26,000 units per kilo of body weight.

The older method of administering gas gangrene antitoxin for curative treatment consists of administering an initial dose of four vials (each containing a "minimum therapeutic dose"), and three or four vials thereafter every four to six hours for two or three days. After preliminary

experimentation and consultation with various authorities in the field, massive doses of antitoxin over a short period of time were deemed preferable to the older method. The results obtained from subsequent experimentation upheld this opinion.

In a preliminary experiment the smaller and more extended antitoxin dosage was used, which was roughly 500 to 600 units of perfringens antitoxin per kilo with the other clostridial antitoxin units present in vial proportions. Eight doses of this strength were given at six-hour intervals for a curative treatment. The massive dosage of antitoxin agreed upon and used in all other experiments was 2,000 units per kilo of perfringens antitoxin, with the other antitoxins present in vial proportions. Four doses were administered, each at two-hour intervals, over an eight-hour period of treatment for a total of 8,000 units per kilo of body weight.

When used as a definitive agent, the therapeutic dosage of sulfadiazine was identical with that used in the prophylactic experiments. When used as an auxiliary agent, a single dose of sodium sulfadiazine was administered three hours after inoculation.

**Results**—With sodium sulfadiazine used singly as the therapeutic agent against the mixed infection of *Cl. perfringens*, *Cl. septicum*, *Cl. sordellii*, and *Staph. aureus*, there was a 48 per cent survival in a group of 25 dogs as compared to a 6 6 per cent survival in a control group. Against the same infection, using penicillin in a pilot experiment on 10 dogs, there was a 100 per cent survival (Table 2).

In a pilot experiment where penicillin was em-

ployed therapeutically against an infection produced by *Cl. novyi* alone, there was a survival of 66.6 per cent in a group of 6 dogs. However, part of the penicillin dosage in this experiment was lower than the dosage subsequently considered adequate. In all the above experiments, treatment was initiated *three hours after inoculation* with the infectious agents.

The infections for the remaining experiments in therapeutics were produced by the Mixed Inoculum II which included *Cl. novyi* as well as the organisms of the first mixture. A total of 99 control animals were used for this group of tests. At the same time controls were inoculated with single cultures of each of the organisms of the mixture, in order to check on any change in virulence of the individual species. There were no survivals in either the mixed or pure culture groups of controls.

Penicillin was used for therapeutics singly, with sodium sulfadiazine as the auxiliary agent, with sodium sulfadiazine as the second definitive agent, and with antitoxin as the second definitive agent. An experiment with penicillin used singly, *three hours after inoculation*, on 25 dogs, showed a 100 per cent survival. In an experiment with penicillin *six hours after inoculation* and with sodium sulfadiazine as an auxiliary, there was an 88 per cent survival in 25 dogs. In an experiment with penicillin *twelve hours after inoculation* and with sodium sulfadiazine as an auxiliary agent there was only an 8.3 per cent survival in 12 dogs. To check compatibility of penicillin and sulfadiazine, both agents were used definitively on 6 dogs, *three hours after inoculation*, with a resulting 100 per cent survival. In a second check, penicillin was used singly, *twelve hours after inoculation*, on 6 dogs, with no survivals.

In the experiment in which penicillin and antitoxin were used as joint definitive agents, treatment was concomitant with both drugs but was continued for only half the regular treatment period. Sodium sulfadiazine was used as an auxiliary agent and the definitive treatment was started *twelve hours after inoculation*. The survival in 25 dogs was 88 per cent. However, since two of the fatalities resulted from an anaphylactoid effect from the antitoxin rather than from the clostridial infection, the true percentage of dogs dying from actual infection was 4.4 per cent. This antitoxin-penicillin combination was apparently the best treatment for the advanced stages of the infection.

Pentavalent antitoxin was used for therapeutics singly, with sodium sulfadiazine as the second definitive agent, or with sodium sulfadiazine as an auxiliary agent. In the pilot experiment, antitoxin was administered in the smaller dosage over

a longer time interval and the results from this were unsatisfactory, since there was only a 62.5 per cent survival in 8 dogs, with treatment initiated *three hours after inoculation*. In an experiment in which the massive doses of antitoxin were administered, *three hours after inoculation*, over a short period of time (eight hours), there was an 88 per cent survival in 25 dogs. When antitoxin in massive doses plus sodium sulfadiazine as an auxiliary agent was administered, *twelve hours after inoculation*, a survival of 92 per cent in 25 dogs resulted (Table 2).

When antitoxin in massive doses with sodium sulfadiazine as the second definitive agent was used *twelve hours after inoculation*, a survival of 84 per cent in 25 dogs resulted. This percentage of survival, with sodium sulfadiazine administered throughout the experiment, is lower than the survival when only one dose of sodium sulfadiazine was given. However, the local sepsis with the extended sodium sulfadiazine treatment appeared somewhat less than when a single dose was employed.

### Statistical Analysis

The results of each of the experimental groups were tested by the chi square<sup>7</sup> technic against the corresponding control group results to determine whether or not the differences obtained could be attributed to chance. By this technic the hypothesis is set up that there is no difference between the results of the two groups being compared. From the survival results obtained in each of the two groups and in the total of the two groups, the survivals expected by chance were computed. The deviation of the obtained results from the expected results was then computed and chi square determined. The probability of obtaining a chi square as large or larger than that found was then looked up in the table of chi squares. The probabilities for each of the chi squares determined are shown in Table 1.

From the table, it may be observed that the differences between experimental animals and the controls are clearly not due to chance for all groups treated with sulfadiazine p ophylactically except the *Cl. novyi* group. The probabilities of obtaining chi squares as large as those occurring here were as small as  $2 \times 10^{-9}$ , so that we can reject with certainty the hypothesis that the differences arising between the controls and experimental groups are not real. Similarly, the animals treated with sulfathiazole showed higher survival rates than the control group. Again the differences cannot be attributed to chance except in the case of the *Cl. novyi*.

It should be noted that the survival rates are higher for the sulfadiazine-treated animals than for the animals treated with sulfathiazole.

The results for the sulfanilamide groups are not so conclusive. The probabilities are high enough so that we must retain the hypothesis that there is no difference in the case of the three inocula, *Cl. perfringens*, *Cl. novyi*, and *Cl. septicum*. For the *Cl. sordelli* and Mixed Inoculum I the probabilities are low enough so that we can reject with confidence the possibility that the differences are chance differences.

In the therapeutic studies all chi squares have low P values, indicating that there are real differences between the results of the experimental animals and those of the controls. The P values range from  $4 \times 10^{-4}$  to  $2 \times 10^{-9}$ .

### Clinical Applications

As pointed out earlier in this paper, clostridial infections, as produced by us in dogs are not entirely comparable to the clinical disease as it occurs in humans. The main difference is one of rapidity of progress of the disease, it being much more rapid and severe in the dog. Experimentally we see no cases of "clostridium cellulitis." All instances are those of true fulminating gas gangrene. As pointed out in a previous publication,<sup>2</sup> clinically one frequently sees mild, border line, and atypical cases which we have termed "clostridium cellulitis" in contradistinction to the fulminating case with deep muscle involvement.<sup>3</sup> In the dog we initiate the disease by introducing a large number of vegetative organisms and spores in conjunction with varying amounts of toxin. Clinically the individual has a variable number of spores introduced into the subcutaneous tissues by a variable traumatic mechanism. This injury may or may not be trivial and in itself may endanger the life of the individual.

Regardless of this particular aspect a certain and again variable length of time is required for the clostridial spores to become vegetative and proliferate. As proliferation progresses the exotoxins are formed *in situ*. It may require twelve to forty-eight hours after infection before the disease becomes manifest clinically. In the dog the disease, as produced by us, is clinically manifest in three to six hours. These differences must be kept clearly in mind when any attempt is made to transfer our experimental experience to clinical application.

**Prophylaxis**—We feel that from a prophylactic viewpoint sulfadiazine, given systemically in amounts sufficient to maintain an adequate blood level, is the best of the three sulfonamides employed, and sulfanilamide is the least effective. A high percentage of protection should be afforded against *Cl. perfringens*, *Cl. septicum*, and *Cl. sordelli*, provided sulfadiazine is given soon after injury and possible contamination

with any one of the three clostridial organisms named. If the contaminating organism should be *Cl. novyi* little or no protection can be expected from any one of the three sulfonamides employed.

In these studies we have not tested the relative efficacy of the sulfonamides when applied locally to the wound, and all our deductions are based on the systemic use of the drugs.

Penicillin was used prophylactically in a pilot experiment against *Cl. novyi* only. Here it was efficacious and would be expected to be. From a practical clinical viewpoint this biologic does not lend itself to prophylactic treatment and certainly could not be used routinely for this purpose under battle conditions. It is very rapidly excreted and it would be difficult to maintain an adequate blood level save with hospitalization. The limited supply and the high cost further contraindicate its use for such a purpose.

We have not tested the prophylactic use of pentavalent antitoxin in our studies.

**Therapeutics**—Once a true gas gangrene is clinically manifest, sulfadiazine, judging from our experiments, should be expected to be approximately 50 per cent effective. Here it may be best to give the initial dose in the form of sodium sulfadiazine intravenously in order to immediately obtain a therapeutic concentration of the drug in the blood. The clinician will have to use his judgment, the size of the dose depending upon the severity of the condition. Subsequent doses may be given by mouth, provided the patient is able to retain the drug and his condition is such as to permit adequate absorption from the gastro-intestinal tract.

Penicillin is much superior to sulfadiazine as a therapeutic agent and is also effective against *Cl. novyi* as well as the other three clostridial organisms employed. Early in the clinical disease it should be extremely efficacious against the disease, but becomes decreasingly so as toxicity progresses. In our studies a three hour postinoculation treatment resulted in a 100 per cent survival, treatment six hours postinoculation gave 88 per cent survival, treatment twelve hours after inoculation gave no survival (only twelve dogs were used in the last experiment).

This decreasing survival rate with increasing toxicity is to be expected. So far as we know, penicillin has no antitoxic properties. Late in the disease death may be and is caused by the exotoxins liberated by the invading organism even though the local sepsis is brought under control. This point should be kept in mind from the clinical standpoint. A patient or an animal may survive the infection and yet be left with permanent cardiac damage.

**Pentavalent Gas Gangrene Antitoxin**—Antitoxin, when given by the older method described

under the experimental studies, was not too effective (62.5 per cent of eight dogs) but when used in large amounts and given within eight hours it was very effective. In patients who are well advanced and toxic it is the only method we found effective. If supplemented by sulfadiazine (see Table 2) or penicillin it becomes very effective experimentally as late as twelve hours after inoculation. In using antitoxin clinically a predetermined dose is impossible. This can be determined only by the proper evaluation of the toxicity of the patient and the stage of the disease. The total amount should be administered within eight hours at intervals of not more than two hours. It should be remembered that antitoxin therapy is not without danger. Two of our dogs died an anaphylactoid death immediately following antitoxin treatment. Clinically the patient should be tested for sensitivity, and, if sensitive, carefully desensitized. Sulfadiazine or penicillin may be used during this desensitizing period. Experimentally, we found no contraindication to the combination of all three of these drugs. Preferably, penicillin and antitoxin should be combined in severe cases, the former to combat the local sepsis and the latter to neutralize the toxin.

The prophylactic and therapeutic measures which we have discussed should in no way interfere with the proper surgical care of the patient with gas gangrene, nor is it meant to replace adequate surgical care. We have previously pointed out<sup>2</sup> that surgical amputation should be dictated by the state of the vascular bed rather than by the infection. The presence of a relatively intact vascular bed leads to conservative measures.

## Summary

It should be borne in mind that this is an experimental study and any clinical recommendations made are based upon animal experimentation and previous publication of a clinical nature. Adequate surgical care should not be neglected. In the presence of an adequate circulation of the affected part conservatism should dictate the extent of surgical intervention. Often careful cleansing and adequate drainage will be sufficient surgery.

**Dr. John J. Morton, Rochester, New York.**—It goes without saying that adequate supportive measures are especially indicated in surgical infections.

It is my impression that the peritoneum is able to handle a considerable amount of infection, provided it is not a massive dose at one time or is not fed continuously from a focus. In the ordinary surgical infections, taken early, if the surgeon causes little trauma, healing will proceed without incident. The

Experimentally, sulfadiazine has proved to be extremely efficacious in its prophylactic use against *Cl. perfringens*, *Cl. septicum*, and *Cl. sordellii* infections in dogs when the disease is produced by individual pure cultures and when produced by a mixed culture of these same organisms contaminated by *Staph. aureus*. None of the sulfonamides were found to be effective against the disease when produced by *Cl. novyi*.

Therapeutically, sulfadiazine is far less effective but from our limited clinical use of this drug we have felt that it has been of value.

Experimentally, penicillin and pentavalent gas gangrene antitoxin are both powerful therapeutic agents. The latter is the more valuable of the two if used late in the disease, because of its toxin-neutralizing effect. It must be remembered that antitoxin must be used in large amounts and the entire dose given within a relatively few hours rather than spaced over one or more days. The possibility of an anaphylactoid reaction must be borne in mind when used clinically. The patient should be tested for sensitivity and, if he is sensitive, careful desensitization should be carried out. During the period of desensitization, sulfadiazine or penicillin should be used, preferably the latter, if it is available.

Experimentally we found no contraindication to combined therapy with any or all three of the agents discussed. Rather, they have an additive effect. It would seem reasonable in severe cases to give antitoxin in large amounts to control the toxic element, and penicillin for its effect upon the local sepsis.\*

\* We are indebted to Morey Jackson Wantman, assistant professor of education, University of Rochester, Rochester, New York, for the statistical analyses and interpretations.

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## Discussion of Symposium

same is true for occasional accidental soiling. Care and gentle handling of tissues will pay dividends even in the presence of infection. It has been the experience in our clinic, reviewed by Sewell (in press), that the use of nonabsorbable suture material and avoidance of drains into or through the abdominal wall are also of importance. Some surgeons on the service are die-hards and have used catgut for years, so that we have had a number of acute



appendicitis cases to compare with a similar group in which silk or cotton has been used. Wound infections have been in the proportion of 2.4 per cent for silk or cotton to 9.7 per cent for catgut. This is almost a universal experience as recorded in the literature. When a silk-sutured wound does get infected, however, it usually takes 50 per cent longer in time to heal. In a series of simple acute appendicitis cases where no drainage was used subsequent wound infections were 5 per cent; with subcutaneous drains, 43 per cent; and with intraperitoneal drainage, 58 per cent. Intraperitoneal cultures were positive in 38 per cent of these cases. In a similar group of gangrenous appendicitis (in which 88 per cent of intraperitoneal cultures were positive) no drainage gave 29 per cent, subcutaneous drainage gave 72 per cent, and intraperitoneal drainage gave 100 per cent wound infection subsequently. In a group of 155 cases of perforation with gross contamination of the peritoneal cavity from 1936-1941, no drainage was used in 49 per cent, subsequent drainage was used in 52 per cent, intraperitoneal drainage was used in 40 per cent of wound infection, and subsequent pelvic and subphrenic abscesses and persistent peritonitis led to fatalities in the no-drainage group of 11.8 per cent, in the subcutaneous drainage group of 13.6 per cent, and in the intraperitoneal drainage group of 23.3 per cent. Some of us are convinced that catgut, being an absorbable material, causes a "wet wound" suitable for bacterial growth. The folds in a drain likewise trap serum to act as a focus for bacterial contamination. Consequently, by adopting nonabsorbable suture material and by using no drainage our results were improving.

With the advent of sulfonamides we used McBurney incision 100 per cent of the time, nonabsorbable sutures 96 per cent, no drainage 99.3 per cent, and sulfonamides in 97 per cent of the perforated cases (intraperitoneally and in the wound). This was followed by sulfa drug treatment in whatever way necessary. The results in 300 cases to July, 1943, were as follows:

Acute	232	2 wound infections	0.9%	No deaths
Gangrenous	31	1 wound infection	0.03%	No deaths
Perforation with peritonitis	33	11 wound infections	33.0%	1 death
Appendix abscess, catgut drains used	4	4 wound infections	100.0%	No deaths

This gives an over-all mortality of 0.3 per cent. We believe that we have lowered our mortality still further by the use of sulfonamides, and we have lessened the number and severity of the intra-abdominal abscesses. Saturation of tissues is important, but in the wound the sulfonamides slow healing. Therefore we gave up their use directly in the wound. When sulfa drugs are given intra-abdominally, 6-8 mg per cent can be recorded in the serum within twenty-four hours.

In regard to Major Carpenter's and Captain Mich's paper on the use of penicillin in patients with infected bone, our experience is meager. We have only had penicillin for use for a short time.

Our impression is that penicillin should be given intramuscularly and intravenously and probably also should be used directly in the wound. We have found that in so far as we have used penicillin, it has been necessary to remove sequestra when they have been present in order to get ultimate healing. It would be difficult to get a better series of osteomyelitis cases with any treatment than that reported by Dr. Robertson on osteomyelitis in children treated with sulfonamides. In our experience here, we have found that the most striking responses to penicillin have been in its use in serious cavities. Some remarkable results have been seen in meningitis, acute infections of the joints, and infections of the pleura observed in our clinic. It is absolutely essential to be sure that the bacteria are in the group responsive to penicillin therapy. It is our habit to test the organisms against the drug *in vitro* before using it on patients. It is well known that the *Escherichia coli* group of organisms neutralize the effects of penicillin. Consequently, penicillin is contraindicated with appendiceal perforation with peritonitis. It is to be hoped that the use of penicillin in bone infections will be thoroughly studied during the next year so that we will know what value it has in this type of disease.

As to anaerobic bacteria which Dr. Dowdy has reported on, I am in complete agreement with his observations. We have had a chance to follow this work over the last several years in which it has been going on. During this time gas gangrene has become rare in civilian life, possibly because of the use of sulfa drugs. There are several difficulties in the actual practice in the field. One is the difficulty in determining the exact type of anaerobic bacteria present. There are several groups, as Dr. Dowdy has brought out. For this reason we must have a sort of shotgun prescription to hit whichever organism might be the principal one. It is also important to separate out the clinical types of anaerobic infection. It is possible for the anaerobes to live in the subcutaneous tissue without doing any damage. I was able to culture them in the last war for long periods in what appeared to be clean wounds. It was possible to culture between the stitches and to grow *Bacillus welchii* in a surprising number. I have also been able to grow *B. welchii* from the brain and from the lung or pleura in many gunshot wounds in which no bad results followed. When a massive gangrene occurs with the shutting off of circulation and a heavy infection with anaerobic organisms, it would seem that sulfadiazine is the best of the sulfonamides and that penicillin is also excellent, and that polyvalent serum should also be used to neutralize the toxins which have been absorbed. In cases in which the circulation is gone, it will be necessary to amputate. In the less extensive types of infection in which there is merely segmental involvement in groups of muscles, treatment as indicated above will be successful in allowing the surgeon to save the limb and life of the individual.

It has been a pleasure to hear these papers of such timely interest to the profession. I wish to congratulate the speakers on their presentations and the surgical section for arranging this program.

# HISTORY OF A DRINKING HABIT IN 400 INMATES OF A PENAL INSTITUTION

With Special Consideration of Personality and Prognosis

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THIS study of 400 excessive alcoholics in a State prison was undertaken with full knowledge of the immensity and practical importance of the alcoholic problem. Drinking has become a world-wide social phenomenon which concerns physicians, psychologists, educators, ministers, and social workers. It has had its repercussions in the economic and political structure of this country, which has experienced a 'period of "prohibition," a subject of controversy right up to World War II.

In this paper the author will try, in addition to presenting the case study, to close some gaps in research, completed or under way, dealing with the scientific classification of a human habit which, in the opinion of this writer, reflects the precarious state of mind of modern man. In this respect addiction to intoxicants, especially alcohol, can be compared to the growing emotional instability and socially immature attitude among our contemporaries. All these phenomena represent social failures and will have their effect on the formation and type of postwar world which may signify for all mankind progress or retrogression, hope or despair.

Numerous authors have applied themselves to the problem of alcoholism. A. Forel, the late Swiss psychiatrist, and Haven Emerson,<sup>1</sup> in this country, have done pioneer work in this field. Besides, there exist several books or papers referring to or discussing the subject of alcohol and crime. Among these, W. Norwood East's<sup>2</sup> treatise in the *British Journal of Inebriety* of 1940, comprising a list of writings on the same subject, seems to be one of the latest and most interesting papers. The author, who points out that Britain has had the lowest European crime rate for the past decade, states, for example, that 19 per cent of England's murderers were chronic alcoholics, a figure which is close to that found by other authors. The paper also quotes various sources and authorities in England and other countries who believe that alcohol plays a definite role in 90 to 95 per cent of all crime and prostitution cases. In addition, he discusses the legal aspects of alcoholism—for example, the fact that, contrary to the situation in the United States, many European countries do grant extenuating circumstances to an offender who is found to have been even temporarily deprived of

his mental faculties. Another interesting fact is given by the author in establishing a 0.14 to 0.15 per cent concentration of alcohol in the blood as the demarcation line of intoxication, which means that such an amount of alcohol in the blood renders a person incapable of properly driving a car. As to treatment of criminal alcoholics, Norwood East considers psychotherapy as a helpful factor in their rehabilitation.

Of American authors, the Gluecks,<sup>3</sup> in their investigation of Massachusetts criminals, agree that from 40 to 60 per cent of their patients used alcoholic drinks excessively at some time or another. As to the mental effect of alcohol, I refer to a pamphlet issued by the New York State Liquor Authority<sup>4</sup> which gives an excellent description of the alcoholic frame of mind, mentioning expressly the tendency to trespass rules and conventions previously respected. More about physiologic and psychologic effects of alcohol on man can be found in Henderson and Gillespie's *Text Book of Psychiatry*. Finally, a paper by Thimann and Moore<sup>5</sup> entitled "Modern Scientific Treatment of the Chronic Alcoholic" was recently published which outlines all types and possibilities of treatment, pleading for long-term hospitalization of chronic alcoholics in order to adjust their personalities.

This study was compiled of specific material—namely, inmates of Clinton State Prison, New York, whom I had opportunity to observe and interview repeatedly throughout the summer of 1943.

According to available data secured from the inmates personally, and from other reports, the total population of 1,900 men at that time could be divided, as to their drinking habits prior to their arrest, into the following groups:

TABLE 1

Group	Number	Percentage
Temperates	646	34
Moderates	836	44
Intemperates	418	22
Total population	1,900	100

Roughly speaking, this would mean that one third of the prison population can be considered as abstaining, whereas two thirds indulged in alcoholic beverages prior to their arrest (one half of these were excessive drinkers). It would be

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interesting to compare these figures with the respective numbers computed out of the nonprison civilian population. Such statistics, unfortunately, are not available to the author at the present time.

Turning to the 418 intemperates—400 were selected and scrutinized in various ways. Their racial and social background, their physiologic and mental development were examined, the formation of their alcoholic habit was traced, the social implications of the habit were presented to them, and special consideration was given to their personality and prognosis. The following tables were compiled in accordance with such an outline. (Fractions of per cent were evened off, with the word "approximate" denoting this.)

### Racial and Social Background

Among the total prison population of 1 900 men at that time, the proportion of colored men to white was 20 per cent to 80 per cent. Of the 400 excessive drinkers 69, or approximately 17 per cent, were colored and 331, or approximately 83 per cent, were white men. This means that, relative to drinking, the white race had a slight edge over the colored, which, however, may prove negligible in a larger survey.

Table 2 shows the marital status of the selected cases.

TABLE 2

Status	Number	Percentage
Single	192	48
Separated or divorced	76	19
Married	74	18 (approximate)
Common law	35	9 (approximate)
Widowers	23	6 (approximate)
Total	400	

This table gives evidence of the wholesomeness of marital or at least common-law relations, whereas individuals who are single apparently take to drinking more readily.

Table 3 covers the occupations of our men.

TABLE 3

Occupation	Number	Percentage (Approximate)
Common laborers	177	44
Skilled laborers	162	41
Occupational drinkers (waiters, bartenders, brewers)	25	6
Professional and independent businessmen	25	6
Clerical workers	11	3
Total	400	

The table indicates that laborers indulge in drinking more than the clerical or professional group. However, the prison population consists

mainly of unskilled laborers, which proves again that social failure, like crime and addiction to alcohol, coincides with lack of vocational training, which is symbolic in socially useless personality types. The relatively low number of occupational drinkers would point to the assumption, expressed by some authors, that opportunity of obtaining drinks must not necessarily promote inebriety, but that in all probability personality and physiologic inclination play the decisive role in the formation of a drinking habit.

### Physical Development

Table 4 depicts the various age groups included in this survey.

TABLE 4

Age	Number	Percentage
10 to 19	1	
20 to 29	88	22
30 to 39	131	33 (approximate)
40 to 49	109	27 (approximate)
50 to 59	48	12
60 to 69	19	5 (approximate)
70 to 79	4	1
Total	400	

Thus it can be seen that excessive drinking affects younger persons up to the age of 40 (55 per cent) with a sharp rise in the age groups from 20 to 40. After the age of 40 it steadily declines.

Table 5 shows the physical (medical) classification of the 400 intemperates.

TABLE 5

Class	Number	Percentage (Approximate)
Class I (best condition)	67	17
Class II	273	68
Class III	38	10
Class IV (worst condition)	2	5
Total	400	

Most of the men are in class II, which denotes only fair health. Considering that the majority was in the younger age groups, it would indicate that excessive drinking has its ill effects on a person's health even if only to some degree.

Table 6 denotes the history of the men's social diseases.

TABLE 6

	Number	Percentage
History of venereal infections	160	40
No history of venereal disease	240	60
Total	400	

The percentage of the positive cases appears to be relatively high, this is another hint that

crime, addiction to intoxicants, and incapability to solve the sex problem are all manifestations of a social maladjustment.

### Mental Development

All 400 men were tested psychometrically in order to obtain their intelligence quotient (I.Q.).

TABLE 7

Status	I.Q.	Number	Percentage
Feeble-minded	Up to 70	3	1 (approximate)
Borderline	71 to 80	47	12 (approximate)
Dull	81 to 90	116	29
Average	91 to 110	181	45 (approximate)
Superior	110 and up	53	13 (approximate)
Total		400	

I.Q. of 100 = mental age of 15 years = normal intelligence.

The average and dull groups comprise the majority (74 per cent) of our men. In other words, excessive drinking seems to have had no effect on their intellectual capacities. This is understandable if one recalls that a majority—55 per cent (see Table 4)—were under 40 years of age and could not possibly have used alcohol for an appreciable length of time. It is known to psychiatrists that high-grade intellectual deterioration as a final outcome of a drinking habit usually requires more than a dozen years to materialize; it is a rather slow and gradual process. However, our findings should not deceive anybody as to the detrimental effect of habitual drinking on a person's social and moral standards.

Regarding the psychiatric classification of our material, the following data could be compiled:

TABLE 8

Status	Number	Percentage
Psychopathic	164	41
Alcoholic	116	29
Approximately normal	46	11 (approximate)
Potentially psychotic	35	9 (approximate)
Drug-addicted	23	6 (approximate)
Sex-perverted	11	3 (approximate)
Feeble-minded	3	1 (approximate)
Epileptic	2	
Total	400	

The table shows that only 11 per cent were classified as being approximately normal, although even these men partially showed either psychopathic traits or alcoholic trends, the latter meaning that there was an underlying inclination toward addiction to alcohol. The vast majority were psychopathic personalities of the antisocial, egocentric, or the more specific alcoholic, drug-addicted, sex-perverted, and epileptic types. In addition, approximately 1 per cent were considered as definitely feeble-minded, a negligible number, supporting the aforemen-

tioned statement that we are dealing with relatively young men, without the mental deterioration observed in cases of alcoholism of long duration. As to the drug addicts among the psychopaths, we could not find that drug addiction would bar completely a craving for alcoholic drinks. Such an assumption rests on a popular, but partly false, belief that "whiskey and drugs don't mix." The sex-perverted, among the psychopaths, form a relatively small group (3 per cent); they are nearly all homosexual or sodomists, but are not guilty of the more numerous cases of rape upon adult women. The so-called potentially psychotic cases (9 per cent) were emotionally highly unbalanced individuals, some of them on the brink of insanity.

Table 9 represents those having a history of insanity.

TABLE 9

	Number	Percentage (Approximate)
History of insanity	39	10
No history of insanity	361	90

Among the first group of 39 men who had been committed to a mental hospital one could find only 3 cases of a former alcoholic psychosis. In the great majority the hospital diagnosis was psychosis in psychopathic personality (periods of either excitement or depression). This, and the generally small number (10 per cent) of incidences of insanity among the excessive drinkers would strengthen the supposition of many leading psychiatrists that alcoholism is a symptom rather than a cause of mental disorders.

### Formation of the Alcoholic Habit

To trace the origin of the habit as to heredity, time of onset, physiologic inclination, type of preferred drink, and motivating factors formed one of the main reasons for this study.

As to hereditary factors, it is fairly safe to assume that chronic alcoholism has its noxious effects on the germ plasma. Extensive investigations have been made in this respect and we can find illustrative charts about these facts in every exhibition concerning health. Interestingly enough, our material shows the following somewhat surprising figures:

TABLE 10

History	Number	Percentage
Chronic alcoholism in one or both parents	155	39 (approximate)
No chronic alcoholism in parents	217	54 (approximate)
Unknown	28	7
Total	400	

Thus, a slight majority of parents were more or less abstainers, I say more or less, since this information was secured from convicts who, as a rule, are prone to prevaricate (Other data were supported by official investigations and reports) One may surmise that even the criminal is anxious to protect his parents' reputation. However, the apparent contradiction regarding these figures may be explicable if one views the average so-called "dead end kid" with his predilection for increased use of intoxicants.

The next table is interesting, as it shows the age at which drinking was started.

TABLE 11

Age	Number	Percentage
5 to 9	3	1 (approximate)
10 to 19	246	61 (approximate)
20 to 29	124	31
30 to 39	24	6
40 to 49	3	1 (approximate)
Total	400	

A majority began in their teens and 93 per cent were involved up to 30 years of age. Comparing this with the actual age of our men (see Table 4) one can roughly say that ten to twenty years elapsed from the onset of the habit until the individual found himself in the grip of the law. In other words, it still takes years until the steady use of alcohol leads to a loss of self-control to such an extent that major offenses are committed. Apparently there develops an internal struggle in a person between the good and bad character traits until the latter ones prevail, this is because alcohol physiologically lessens the control of the higher over the lower brain centers, thus impairing and finally eliminating sound judgment and common sense.

The physiologic inclination (taste) for intoxicants and especially alcoholic drinks is reflected in the following table.

TABLE 12

	Number	Percentage (Approximate)
Taste for alcohol	311	78
No taste for alcohol	89	22

It was authoritatively pointed out years ago that among the major causes of alcoholic addiction a taste for drinks might play an important role in establishing the habit. Our table would confirm this assumption, moreover, the real figures might be even higher on the affirmative side, considering the inmate's tendency to twist matters. Actually, this author believes that other physiologic factors besides taste act simultaneously toward formation of a drinking habit.

Apparently the whole gastrointestinal system must agree with the intoxicant, since it is known that ingestion of even small amounts of alcohol renders some people quite ill (vomiting, diarrhea, acidosis, etc). As pointed out previously, a relatively small percentage (6 per cent) of the men were classified as drug addicts, having used drugs and drinks conjointly prior to their arrest. Inquiring into a history of drug addiction, the percentage rose to 9 per cent, i.e., obviously our material was of the type which tends physiologically much more toward alcohol than toward drugs (alkaloids).

Table 13 gives evidence of the type of drink preferred by each of the men.

TABLE 13

	Number	Percentage
All types	216	54
Hard liquor	85	21 (approximate)
Beer	79	20 (approximate)
Wine	20	5

Thus a slight majority (54 per cent) used every type of alcoholic beverage. In general, a person with a long-standing alcoholic habit finds little difference between intoxicants as long as non-alcoholic beverages are excluded. Consequently, this group comprises the older men who had been victims of addiction for a long period of time. Drinkers of hard liquor, mainly whiskey, comprised the second largest group (21 per cent), beer drinkers closely following (20 per cent). Wine (5 per cent) seems to have been an unpopular beverage among our intemperates.

Finally, the formation of the habit with regard to the motives inducing a man to drink was examined.

TABLE 14

Motive	Number	Percentage
Sociability	302	76 (approximate)
Occupational opportunity	32	8
General worries	25	6 approx
Marital difficulties	23	6 approx
Inferiority feelings (anxiety)	18	4 approx
Total	400	

An overwhelming majority (76 per cent) made the acquittance of alcohol through their environment, specifically, at social occasions, such as house parties, or by frequenting saloons or so called beer gardens. The social factor constitutes the most potent incentive for drinking, out of the environmental influences in general. Sociability also played its part in the other groups. The occupational opportunity seems to have had relatively little effect as a motive, however, the number of occupational drinkers (see Table 3).

formed a small part of the total group, so that any definite conclusions in this respect would prove incorrect.\* Mental stress, in one way or another, as a motive for their habit, makes up for the remainder of our men. It is a fairly large group (16 per cent), out of which only 4 per cent claim anxiety as the moving cause. The role of anxiety in excessive drinking seems to be overestimated unless we consider all drinking as an expression of "timid souls." I shall revert to this point while discussing possible treatment of inebriates.

### Social Implications of the Habit

To engage in broad discussion as to the social implication of inebriety and its relation to crime appears to be superfluous, in view of the many excellent papers written on this subject. That chronic alcoholism accounts for family trouble and misery of all kinds is almost a truism, known to every child living in a slum district. In Henderson and Gillespie's *Text Book of Psychiatry*, drinking is regarded as the biggest single cause of crime. Perhaps the worst effect of alcohol on a man's mind is the evident gradual loss of judgment which leads to all sorts of abnormal—in many cases, antisocial—demoralizing behavior. An aggressive indecent attitude characterizes certain stages of intoxication which render a person incapable of controlling himself and make him liable to commit illegal acts. Such offenses may lead to long prison sentences; one third of our 400 offenders, for example, had to serve from ten to twenty years' imprisonment for crimes perpetrated while under the influence of intoxicating beverages.

The last of our tables depicts the range of crimes committed by our 400 inmates during a state of alcoholic intoxication. It is a clear admonition to all who are interested in public welfare and human progress in general.

TABLE 15

Type of Crime	Number	Percentage
Murder	46	60 { 11 (approximate) 5 32 (approximate)
Manslaughter	20	
Robbery	127	
Sex (rape, incest, bigamy, impairing morals of minor)	48	12
Acquisitive crimes (burglary, larceny, forgery, swindles)	148	37
Criminal negligence (fatal auto accidents)	8	2
Escape		
Abandonment	3	1 (approximate)
Arson		

We see plainly that the first four groups together (60 per cent) comprise the majority of crimes against persons, ranging from simple assaults to murder (11 per cent). Thus the violent

character of at least one half of all intemperates becomes manifest. The others (40 per cent) proved to be less active and restricted themselves to crimes of the acquisitive type. In general, the type of crime perpetrated seemed to be determined more by the man's personality than by external factors (environment, opportunity). Some of our inmates, especially those of the violent group (murderers, rapists), appear to be vicious creatures when intoxicated. It is this fact which impresses one mostly, to find a relatively pleasant, even shy, sometimes highly intelligent individual, who is accused of crimes completely out of proportion to his demeanor in a sober state of mind. Moreover, I doubt whether there is a more artful procurer to moral turpitude than alcohol. Most of the gross sex crimes can be traced back to alcoholic intoxication, since it is well known that alcohol acts as an aphrodisiac in many cases by abolishing sexual inhibitions, physiologically. Bewilderment during a state of intoxication leads occasionally to arson. Such offenders are registered, by psychiatrists mainly, as psychopathic personalities or hysterics, sometimes more specifically as pyromaniacs (propensity to incendiarism). Hardly ever is insurance money involved in these cases.

Among the more unusual crimes perpetrated by our excessive drinkers, a number of sex crimes (incest, attempted rape of old women, and murder of male friend) are interesting from the psychiatric angle.

### Case Reports

*Case 1.*—W. C. was a 20-year-old, single, white man of American parentage, the second born in a family of seven children, raised in a seaside section of Brooklyn, New York; his education continued through one year of high school. He worked as laborer; his I.Q. 123). He received excellent education in school but is considered by others as extremely sly and cunning. He received two suspended sentences for acquisitive offenses between the ages of 19 and 20; present crime, sex relations with 15-year-old sister (child born). The inmate is emotionally highly immature and was closely attached to this sister; together they visited beaches and places of entertainment. The inmate is now quite embarrassed about the matter, claiming that his sister did not understand the nature or effect of the crime; apparently there was no guidance of the girl. The striking point in this case is the contrast between the high intelligence and the low emotional level which resulted in moral depravation under the influence of liquor. . . . does not prevent a person . . . morally—a fact which . . . d by the public.

*Case 2.*—H. G. was a 48-year-old white man of German parentage, the third among eleven siblings. He had a criminal record from the age of 23 for acquisitive as well as sex crimes. He assaulted a 60-year-old spinster in a cemetery; he does not recall anything about it, because of his intoxication

at the time. He was charged with another similar attack in a cemetery. One of his brothers has a long criminal record. The inmate was employed as a weaver and also was sentenced as a deserter from the United States Army; he patronized prostitutes, but denies being "oversexed." The patient's intelligence is in the dull level (I.Q. 83). He is considered by psychiatrists to be a psychopathic personality; he is seclusive and an introvert, except when under the influence of alcohol. The outstanding feature of this case is the patient's abnormal sex life. He appears to be shy when sober, but becomes aggressive when intoxicated and apparently stalks his victims in hidden places. Alcohol helped him to overcome his otherwise cowardly attitude toward the love problem, rendering him superior to old women and children.

Case 8.—A. O. was a 56-year-old, single, homosexual Negro; he was the only boy in the family, and had three sisters. His occupation was given as

suave, whimsical attitude, with pronounced effeminate manners. Particularly interesting is his

becoming bored with girls, who, he claims are nauseating. The inmate asserts that he would not have lost his composure had he not been drinking. Again, we see that intoxicants support this man's abnormal will for power, expressed in his violent fits of jealousy.

This study attempts to examine all factors contributing to the formation of a drinking habit. But with all consideration given to environmental influences, one sees repeatedly that the personality of the alcoholic plays a decisive part in the total course of his life and destiny, determining also the recurrent type of his antisocial conduct. The mental development of the inebriate, his motivation for starting the habit, the unfavorable social implications of such an addiction—all these factors point to what may be condensed into one word: personality. Without doubt, conscious and unconscious feelings of inferiority or insecurity, natural and normal in adolescence, cause a person to seek contact with others to unburden himself from all the pressing problems of life. The kind of entertainment and sociability will then determine whether such a person is initiated into a drinking habit. Whether he continues drinking will depend not only on his environment (opportunity, occupation) but apparently to a large degree on his state of mind (personality), supported by a physiologic inclination (taste, etc.) for alcohol.

It was interesting to divide our 400 cases into a few groups according to their personalities and the special character traits ascribed to chronic al-

coholics, such as emotional instability, anxiety, etc. The following table shows the result:

TABLE 10

	Number	Percentage
Extroverted, sociable and cooperative	252	63
Introverted, unstable, anxious	98	24
Aggressive	28	7
Religious	20	5
Jealous	4	1

Thus, a fairly large majority (63 per cent) were found to be relatively sociable and cooperative but apparently took to drinking, feeling unable to face the usual responsibilities and problems of life. A relatively small group (24 per cent) evinced signs of a neurotic attitude promoted by personal worries and anxiety, such as marital difficulties or sickness. That the group of those who are decidedly aggressive comprises only 7 per cent of the total intemperates will not surprise anyone who recalls the rule that addicts in general are less active than other social misfits. The small group (5 per cent) of the devoutly religious men was found to be very similar in their general make up to the introverts. The negligible group of those professing jealousy was not regarded as revealing the true figure of such individuals; obviously, a convict prefers to be taken as "tough," which in itself is not consistent with too much concern shown over his partner's attitude. A more detailed personality study of the occupational drinkers was not contemplated in this paper, since the number of such cases was insufficient to be used convincingly. Altogether, no outstanding character features were discovered among our excessive drinkers except for the fact that their personalities reflected the underlying, and, for the most part, unconscious, feelings of inadequacy in dealing with life's problems. In this respect, drinking must be considered as a trick to rid oneself of such feelings.

It is fitting, after scrutinizing our material in various directions, to look for the practical value of this study. What can be done to prevent crimes committed after drinking sprees? Will these 400 men relapse into their habit after release from prison? Can they be treated and cured of their addiction? Obviously, something has been done in our cases, since it was pointed out that their personalities did not evince such repulsive characteristics as are usually seen in intoxicated persons. Apparently enforced abstinence in the institution had its wholesome effect. It may not have altered their basically "timid souls," but it has been a prerequisite for any other successful treatment, be it medical, mental, or spiritual. If they are guided after dis-

charge in a scientifically planned way and thus acquire the ability to lead a social life with an adequate emotional outlet, their prognosis can be considered as favorable. To prevent crimes perpetrated in a state of mental confusion caused by alcohol, we must remain alert and aware of the fact that habitual drinking, whether moderate or excessive, represents a mental crutch for persons who lack social and emotional maturity. If we can instill a broader, more intensive social interest into the minds and hearts of the younger generation, we shall have accomplished a major achievement toward crime prevention both in inebriates and in abstinents.

## Conclusion

Four hundred former excessive drinkers, con-

fined in a penal institution, have been scrutinized with regard to their background, their personal development, and the formation of their habit. The role of personality as the decisive factor in their social failure was illustrated. Possibilities of treatment and prevention of inebriety were advanced.

## References

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## INTERNATIONAL COLLEGE OF SURGEONS MEETING

The program at the Ninth Annual Assembly of the United States Chapter of the International College of Surgeons will be devoted to war, rehabilitation, and civilian surgery. The sessions will be held at the Benjamin Franklin Hotel in the City of Philadelphia, October 3, 4, 5, 1944.

The convention will open at 10:00 A.M. on Tuesday, October 3, with an address by the Honorable Bernard Samuel, Mayor of the City of Philadelphia, to be followed by Dr. Rufus S. Reeves, M.D., Director of Public Health, Philadelphia, Hubley R. Owen, M.D., president of the Philadelphia Academy of Surgery, and Charles L. Brown, M.D., president of the Philadelphia County Medical Society.

In the evening "Service Night," the guest speakers will be Vice-Admiral Ross T. McIntire (MC), U.S. Navy; Maj. Gen. George F. Lull, Deputy Surgeon General, U.S. Army; Captain Joel J. White (MC), U.S. Army, Dr. Charles M. Griffith, Medical Director, U.S. Veterans Administration, and other distinguished guests.

Dr. Morris Fishbein will be the principal speaker at the convocation exercises on the following evening, when one of the largest classes in the history of the College will be accepted into Fellowship and Membership. Dr. Rudolph Jaeger, formerly of Denver, Colorado, and now in charge of neurosurgery at Jefferson Hospital, Philadelphia, will be inducted into office as the new president of the United States Chapter of the College.

Among the activities planned are a tour of hospitals and attendance at clinics, under the direction of Dr. Leonard D. Frescoln, of Philadelphia. More than fifty prominent surgeons and others engaged in the work of rehabilitation and occupational therapy will present twenty-minute papers during the morning and afternoon sessions.

There will be general surgery in one group and alternating groups of gynecology and ear, nose and throat.

More than 250 feet of panel space has been set aside for scientific exhibits, some of which are being shown at this Assembly for the first time. Among these exhibits are "Thyroid Surgery Demonstrating a New Triangle for the Localization of Recurrent Laryngeal Nerve on the Basis of new Landmarks," "Neurosurgery," "Surgical Treatment of Cancer

of the Rectum Without Colostomy and Preservation of the Sphincter Muscles," "Sclerotherapy," and many others.

Among some of the special features to be shown are a new exhibit on war activities by the American Red Cross and the original paintings "The Seven Ages of the Physician," through the courtesy of the Ciba Pharmaceutical Products, Inc., and "Pioneers of Medicine" through the courtesy of Wyeth, Incorporated.

A variety of motion pictures in black and white and in color will be shown on craniocerebral surgery, bone and joint surgery, plastic surgery, as well as some new and original pictures dealing with medical entities.

Special arrangements have been made with hotels in Philadelphia to take care of visitors from distant places. Information may be secured from Dr. Benjamin Shuster, Philadelphia.

The medical profession is invited to attend the Assembly and its sessions.

Physicians from the New York area who will speak at the sessions are: Dr. Frederick M. Allen, professor of internal medicine, Polyclinic Hospital—"Surgical Shock and Its Treatment"; Dr. William Seaman Bainbridge, consulting surgeon, Third Naval District, and Attending Specialist in Surgery, U.S. Public Health Service—"A Survey of Surgical Results in Cancer"; Dr. A. A. Berg, consulting physician, Mt. Sinai Hospital—"The Preservation of the Sphincter Ani in Radical Operation for Cancer of the Rectum"; Dr. Lyman Weeks Crossman, professor of clinical surgery, New York Medical College—"Refrigeration for the Preservation of Traumatized Tissue"; Dr. Elias D. Lawrence, adjunct surgeon, Bernert Hospital, Paterson, New Jersey—"Saphenous Vein Ligation"; Dr. Oswald Swinney Lowsley, past-president, American Urological Association—"Plastic Operations Upon the Kidneys"; Dr. Frances I. Seymour, medical director, National Research Foundation for the Eugenic Alleviation of Sterility—"The Responsibility of the Surgeon in the Preservation of Human Fertility"; Dr. Asher Winkelstein, chief, Gastrointestinal Clinic, Mt. Sinai Hospital—"The Relation of Gastric Acidity to Recurrent Ulcers After Partial Gastrectomy."



# VOICE AND BREATHING DISABILITIES FOLLOWING THYROID SURGERY

CHAS GORDON HEYD, M D , D M Sc , F A C S , New York City

NO CLINIC and no surgeon have been immune from voice and breathing disabilities following thyroid surgery. Injury to the breathing and vocal functions of the larynx following thyroid surgery varies from slight, unrecognized, and spontaneously ameliorated conditions to the tragic and devastating results of bilateral abductor paralysis.

It has long been recognized that a patient, after a thyroid operation, may have a unilateral abductor paralysis and exhibit no symptoms or disability thereafter. The maintenance of abductor function on the other side, with subsequent compensation for phonation, is sufficient to insure normal voice, normal breathing, and preservation of the sensory mechanism of the larynx. It is a matter of surprise to most thyroid surgeons to learn, during the course of their experience, of the number of individuals with goiter who have unilateral vocal cord paralysis and who have never been operated upon for their goiter.

When a vocal cord loses its function by a slow and continuous pressure, such as occurs in a progressively enlarging nodular goiter, there is ample time for compensation to take place. Compensation, however, takes time. This condition is essentially different from that which occurs as the result of an anatomic division of the nerve. Compensation in the latter instance cannot be acquired quickly. According to Hoover<sup>1</sup> there is hoarseness or loss of voice immediately following the section of one recurrent laryngeal nerve with the loss of function of this one cord. Ordinarily, however, the loss of function of one cord results in a temporary loss of voice, which lasts from a few days to several months, but one can say almost certainly that the loss of one recurrent nerve will not result in any discomfort to the patient as far as respiration is concerned, and we can assure the patient that the voice will return, because the cord will eventually come to the midline.

The reports of numerous observers and some experimental evidence suggest that undue traction or rough manipulation of the thyroid will not of itself produce injury to the recurrent laryngeal nerve. Yet it has been my experience on numerous occasions, during the course of a subtotal thyroid resection that a patient who is having uniformly smooth respiration—without

any inspiratory or expiratory sound—will develop suddenly an inspiratory stridor upon traction of either the superior or inferior pole of the thyroid. So impressive is this change in the orderly and normal noiseless breathing that it has been a surgical axiom to desist from operative procedures in the area that produced the changed breathing and to proceed with the resection from another approach. I have always viewed a change from noiseless, quiet respiration to a stridulous inspiration as one fraught with danger in regard to laryngeal function after the operation. I am convinced that traction is a dangerous procedure, especially if mobilization of the thyroid is carried out from below upward, and particularly in substernal goiters. There certainly must be a limit to the amount of stretching the recurrent laryngeal nerve may receive without having physiologic loss of function.

Some rather bizarre laryngoscopic findings have been recorded.<sup>2</sup> Paralysis of the vocal cord on the side other than where the goiter is situated, and paralysis of the vocal cord on the side with the least gross tumor or mass are examples. It is not a uniform practice to examine the larynx of every patient with a goiter, but when a competent laryngologist has examined every patient one is surprised to learn that approximately 10 per cent of goiterous patients have a one-sided vocal-cord paralysis before operation. It is unfortunate statistically, that every patient with a thyroid condition has not had a postoperative examination of the larynx. It is alleged that approximately 15 to 20 per cent of the patients operated upon for goiter have, at some time postoperatively, some disability of the vocal cords. Happily, most of these resolved during the immediate postoperative hospitalization or shortly thereafter. However, one would judge from an examination of the literature that about 3 per cent have permanent vocal cord disability in varying degree, and about 1 to 1.5 per cent have major cord disability on both sides following thyroid surgery.

It is a rather interesting observation that it is not the largest goiter preoperatively that produces the greatest number of voice disabilities. In fact, preoperative cord paralysis is found in patients with relatively moderate-sized goiters. One would anticipate that large, nodular, intrathoracic goiters, with displacement and compression of the trachea, would rate high in the numerical frequency of cord disabilities. Such,

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From the Department of Surgery, New York Post Graduate Medical School and Hospital.

however, is not the case, for with the continuous enlargement of the nodular goiter the trachea and the nerve are displaced and stretching of the nerve—if it does occur—is brought about so gradually as not to produce a high frequency of vocal cord change.

The larynx has three functions,<sup>3</sup> all closely interdependent and each necessary for normal voice and respiration. First, and foremost in importance, is the preservation of a normal respiratory airway. This presupposes a normal innervation and a normal muscular apparatus of the larynx. Second is the maintenance of the inspiratory reflex. This function is necessary to protect the larynx from the entrance of foreign bodies, such as food particles and fluids. Third is the preservation of voice. In order for normal voice function to be maintained it is necessary that all of the intrinsic muscles of the larynx function in perfect unison, and with normal innervation.

The disabilities of the voice and breathing in connection with thyroid surgery vary from slight to tragic. We may list them in order of severity somewhat as follows: (1) spasmodic episodes of painful coughing with no expectoration; (2) mucus retention with inability to clear the throat; (3) pain over the region of the molar teeth—the thyromandibular reflex—and the occasional ear-ache; (4) the spasmodic spilling over of fluids into the larynx; (5) the normal voice but with early fatigue and hoarseness; (6) change in the pitch of the voice; (7) the hoarse voice at all times; (8) the inspirational stridor; (9) the stridor and crooning noise when asleep; (10) the whispered voice at all times; (11) dyspnea on exertion; (12) dyspnea on the slightest exertion; and (13) dyspnea at rest.

It is a formidable array, and the interpretation of many of these complications is still doubtful. We know that the superior laryngeal nerve concerns itself with: (1) sensitivity of the upper respiratory or laryngeal mucosa; (2) the innervation of the interarytenoid muscle; and (3) the innervation of the cricothyroid muscle. We know that the recurrent laryngeal nerve supplies all of the intrinsic muscles of the larynx except the interarytenoid muscle and that a total bilateral injury of the recurrent laryngeal nerve means a paralysis of all of the intrinsic muscles of the larynx, that is, the abductors, the adductors, and the intrinsic tensor muscle.<sup>4</sup> Twenty-three years ago, before this Association, the late Dr. E. S. Judd<sup>5</sup> drew attention to the marked variation in the fibers of the recurrent laryngeal nerve. The major function of the larynx is preservation of the airways. This process is an automatic one and is brought about through the activity of the abductor fibers. Phonation is a voluntary function. We have, therefore, a single nerve trunk

carrying continuous automatic impulses, side by side with fibers carrying interrupted or voluntary functions. Experience suggests that the abductor fibers (involuntary) are more easily injured and degenerate sooner than the fibers that carry voluntary impulses.

It is somewhat presumptuous on the part of the general surgeon to attempt to interpret the many bizarre combinations of respiratory and voice changes incident to surgery of the thyroid. It is evident that there is a high compensatory mechanism in the larynx, both for respiration and phonation, and there is considerable variation in the distribution of both the superior and recurrent laryngeal nerve. Little recognition has been given to the fact that there is an anastomosis—nerve of Galen<sup>6</sup>—between the superior and inferior laryngeal nerves. It is this anastomotic bypath that allows compensatory innervation when the recurrent laryngeal nerve is severed. Again, it has been demonstrated frequently that there is an extralaryngeal division of the recurrent laryngeal nerves in fully two-thirds of all individuals. In Lahey's article "Routine Dissection and Demonstration of Recurrent Laryngeal Nerve in Subtotal Thyroidectomy"<sup>7</sup> one reads: "Note its (recurrent laryngeal) division in the two branches, one larger than the other . . . this is an extralaryngeal separation of the nerves into segments to supply the abductors. We have repeatedly seen these extralaryngeal divisions in the course of our operative dissection of this nerve." Later in the text one notes: "In an occasional case the nerve may split into the relatively large group of fibers innervating the adductor muscles of the cord, the crico-arytenoideus lateralis, and the relatively small group of fibers innervating the abductor of the cords, the crico-arytenoideus posterior."

It would appear that the fibers that supply the abductor muscles of the larynx are more susceptible to trauma than those that supply the muscles of phonation. It is not unusual post-operatively to find, on laryngeal examination, that there is a sluggish cord but one with movement which causes no interference with the breathing aperture and with relatively normal phonation.

Of fundamental importance in the consideration of voice and breathing disabilities is an anatomic knowledge of the intrinsic muscles of the larynx and their innervation.<sup>8</sup> The recurrent laryngeal nerve supplies all of the intrinsic muscles of the larynx, both the abductor and the adductor, except the interarytenoid. The recurrent laryngeal nerve carries in separate fasciculi fibers controlling the abductor muscles—the cricoarytenoideus posterior—and fibers controlling the adductor muscles—the thyro-aryte-

noideus, the thyro-arytenoideus lateralis, and the crico-arytenoideus lateralis. The interarytenoid however, is supplied by the internal branch of the superior laryngeal nerve.<sup>9</sup>

The superior laryngeal nerve, represented by an internal and an external branch, has a highly important function in the maintenance of normal laryngeal function. The purpose and function of the superior laryngeal nerve have been largely overlooked by goiter surgeons. The internal branch of the superior laryngeal nerve is concerned with the preservation of laryngeal tone and innervates the interarytenoid, while the external branch supplies only the cricothyroid—a muscle which depresses the thyroid cartilage and acts as a tensor to the vocal cords. The internal branch of the superior laryngeal nerve passes through the thyrohyoid membrane very close to the superior pole of the thyroid and many times is injured in mass ligation of the superior pole, resulting in the surgeon's being somewhat surprised when the patient, immediately postoperatively has violent attacks of coughing and complains that on swallowing material enters the larynx.

We have been told that after severe injury to the recurrent laryngeal nerves the better the voice the g . . . s the voice . . . ”

The worse the voice, the surgeon says, the better will be the breathing space. Anatomic studies prove that the interarytenoid muscle is innervated solely by the internal branch of the superior laryngeal. This explains one of the catastrophes of goiter surgery, for with a loss of the abductor function the cords would naturally tend to approximate each other in the midline, and if the internal branch of the superior laryngeal was not injured the interarytenoids would certainly close the posterior third of the glottal aperture, thus giving a fairly good voice but only a “chink” aperture for breathing.

The cricothyroid muscle has two sets of fibers—the vertical and the oblique. Its purpose is to tense the vocal cords—one of the primary functions of phonation. It is innervated by the external branch of the superior laryngeal. Injury to the main trunk of the superior laryngeal will bring about a paralysis of the cricothyroid muscle and the interarytenoid, and, assuming that the recurrent laryngeal nerves are intact, the vocal cords would be in approximation throughout the anterior two thirds but with a triangular space at the posterior one-third, thus allowing adequate air space but causing practical aphonia.

If the external branch of the superior laryngeal were injured the cricothyroid muscle would be paralyzed and would account for the hoarse-

ness which comes on after using the voice for some time.

A voice disability that has serious significance and which is readily corrected presented itself in a patient who had a subtotal resection and immediately after the operation had normal breathing and normal voice.<sup>10</sup> The operative wound had been closed without drainage. Within a few hours, two or three at the most, the patient began to develop a definitely brassy, metallic voice and breathing became very difficult. This condition progressed with increasing severity and the inspiratory difficulty became more and more marked. In a case of this type there has been no injury to the nervous mechanism of the larynx, but there has been an accumulation of a small amount of blood or wound serum within the fossae formerly occupied by the lobes of the thyroid. These fossae roofed over with the sutured ribbon muscles, offer a cul de sac for the accumulation of fluid with direct pressure on both recurrent laryngeal nerves. Once one has witnessed this complication, its correction is relatively easy. The clips are removed from the skin incision, the skin flaps are raised, and a small amount of picking is introduced to keep the skin flaps elevated. After an hour the sutures that bind the muscles together are cut, the muscle flaps are gently lifted up, and into the space some sterile gauze is lightly inserted. The decompression of the thyroidal fossae lessens the pressure and, slowly but surely, the respiratory symptoms disappear and the voice loses its brassy and metallic quality. At the end of twenty-four to thirty-six hours the patient becomes practically normal so far as the larynx is concerned, and in a few days the wound is closed by secondary suture, with almost the same cosmetic effect as after a primary operation.

One of the annoying complications, but with it not dangerous, nor in our opinion does it lead to subsequent vocal disturbances of major importance, is the development of a postoperative tracheitis. It would appear that in every case of subtotal resection there is some postoperative edema of the mucous membrane of the larynx and upper trachea, and this edema would interfere with the normal laryngeal tonus as is evident by the pain on swallowing and the loss of a prompt cough reflex, resulting in the spilling of fluids into the larynx. Uniformly, this complication appears about twenty-four to thirty-six hours after the operation in a patient who has had a normal voice and normal breathing immediately after operation. The voice becomes hoarse but without a brassy or metallic quality. Under rest and sedation the condition clears up and the symptoms entirely disappear.

Not to be lost sight of in the consideration of

this problem is the patient who has an almost pathologic loquaciousness. This type of patient, three or four days after a thyroid resection, when swallowing is somewhat painful, develops a falsetto voice from overuse and straining. On laryngologic examination the cords move sluggishly. After his discharge from the hospital he persists in straining his voice, so that eventually his cords present the picture of a chronic laryngitis from fatigue. It has been necessary to place two of these patients in charge of a teacher of voice control, and the results have been surprisingly good. By a process of re-education in voice placement and rest they lose the falsetto quality and have a relatively normal voice.

Two schools of thought have arisen in regard to the technical procedures in thyroid surgery as it concerns the recurrent laryngeal nerve. There are two advocates, one of the chief proponents being Lahey,<sup>22</sup> who advise anatomic exposure of the recurrent laryngeal nerve in every thyroid resection. Their position is predicated upon the following observations: (1) that the nerve possesses an almost uniform contour of anatomic line; (2) that it may be readily identified by vision and palpation; (3) that it is always in relation to the branches of the inferior thyroid artery; (4) that only by anatomic exposure and complete visualization throughout the course of the thyroid resection can the surgeon be assured that no operative trauma will happen to the nerve; (5) that sometimes the nerve actually passes through the thyroid tissue and that the assumption "if the clamps bite into the thyroid tissue, the nerve cannot be injured" is not tenable; and (6) that the nerve, if and when injured operatively, is injured close to its point of disappearance under the lower border of the inferior constrictor muscles, and that it is just in this area that the thyroid is most densely attached to the lateral surface of the trachea, so that any attempt to control a bleeding vessel in this situation without actual visualization of the nerve is liable to injure the recurrent laryngeal nerve.

The other school of thought is championed by Dinsmore, who states: "The less I see of the nerve the better I like it." The reasons advanced for his position are: (1) that if the clamps are applied to thyroid tissue and the resection is carried out above the clamps the nerve will not be injured; (2) that visualization and anatomic dissection of the recurrent laryngeal nerve, by and of itself, produce trauma to the nerves; (3) that the syndrome of abductor paralysis can occur after thyroid surgery without any operative injury to the nerve; (4) that the nerve is not an inherently strong nerve and is susceptible to degeneration from the mere operative intervention and handling; and (5) that cicatrization

around the nerve is an important factor in nerve disability.

Clinically, laryngeal disability following thyroid surgery may express itself in many diverse forms:

1. Disabilities that arise during the course of the operation. Under ordinary circumstances and with good anesthesia, the breathing of the goiter patient, aside from those having respiratory difficulties from massive goiters, should be smooth, and without any inspiratory stridor. During the course of the operation many patients do have some vocal change at some point in the resection. This may manifest itself by a change in the expiratory "grunt," but the development of an inspiratory stridor during the course of an operation is a danger signal, and all manipulation should be terminated until breathing becomes normal. It has been assumed, and I think correctly, that any interference during the course of an operation with the function of the recurrent laryngeal nerve will manifest itself by some degree of inspiratory stridor. This is denied by some surgeons, who maintain that the recurrent laryngeal nerve may be injured on one side during an operation without causing any audible change whatsoever. It is for this reason that some operators have insisted upon using local anesthesia so that the patient could phonate or talk during the operation. Bilateral abductor paralysis has occurred in the experience of surgeons who use local anesthesia exclusively.

I think it is correct to maintain that the severance of the recurrent laryngeal nerve during operation will be accompanied by marked inspiratory stridor and by great difficulty in inspiration. Whether a pinch on one side of the nerve without severance will produce any declarative changes in respiration and voice sounds is still not settled. It would appear, however, that after such an injury, degeneration takes place and later comes the tragedy of the "chink" glottis.

2. Patients may have laryngeal dysfunction postoperatively and during hospital residence. For some reasons not thoroughly understood, some patients are returned to bed after a goiter operation and have respiratory difficulty, with changes in voice. They are blue and have difficulty in swallowing fluids, but after a few days the protective mechanism of laryngeal tone is re-established, and they swallow without difficulty and the voice improves. The surgeon is happy that the patient is recovering from some laryngeal disability caused by a temporary mechanism. The patient is discharged from the hospital with a fair voice and adequate breathing airway. Some of these patients will have a complete recovery, but a few, unfortunately, will

come back in not less than six months with only a slight laryngeal fissure for airway. The voice will be fairly good, although a little husky in its lower ranges, and yet they will be in manifest difficulty by reason of their narrow "chink" glottis.

3 Another group of patients are those who return from the operating room and on the first spoken words have a normal voice and no respiratory difficulties. The color is excellent. At the end of forty-eight to seventy-two hours they have attacks of coughing, lose their voice, have some "spill over" of fluids. After a relatively short time they regain their voice and their laryngeal tone, and have no difficulty with breathing. These cases probably represent temporary reactive changes in the larynx sequential to operative trauma.

We have been greatly impressed by the work of one of our associates in the Thyroid Clinic at the New York Post-Graduate Hospital. Dr. Charles O. Fiertz,<sup>12</sup> in "an experience with some 30 cases of vocal cord paralysis, has shown that the great majority of vocal cord disabilities following thyroidectomy are not due to actual severance of the nerve but rather to a more or less severe traumatism and, therefore, are reversible if biologic therapy is instituted. This consists of a steady cathode galvanization over the nerve and interrupted muscle stimulation over the laryngeal muscles of the affected side by whichever current is needed for a good contraction of the vocal cords. In the presence of partial reaction of degeneration—the faradic current, in the absence of faradic response—the galvanic current should be employed. The patient is treated on the basis outlined above for six to eight weeks. If re-examination at that time reveals no change, an anatomic block has to be assumed, and further therapy is useless. If the original examination shows that some faradic response is preserved, the outlook is excellent and restitution within three months can be expected."

The results obtained by Fiertz with this treatment have been surprising, even when the prognosis at first examination was extremely dubious.

By way of illustration, a case of one of Fiertz's patients is herewith reported. It is neither the worst nor the best of his cases. It does, how-

ever, indicate what may be done by patient and persistent effort.

### Case Report

T. R., a woman of 32, consulted Heyd in March 1934, complaining of nervousness, palpitation, and "whisper voice"; she had an indwelling tracheotomy tube. Early in May, 1933, she was treated elsewhere with roentgen ray for hyperthyroidism and on May 29, 1933, an emergency low tracheotomy was performed for "bilateral vocal cord paralysis." The patient was admitted to the Post-Graduate Hospital in April, 1934, and a study was made of her condition. It was found that she had a bilateral abductor paralysis and a basal metabolic rate of +37. On April 21, 1934, the patient had a subtotal thyroid resection of the right lobe, and on May 2, 1934, a subtotal resection of the left lobe of the thyroid. After the second stage the patient was aphonic for four days, when the voice improved. At all times the tracheotomy tube was left in place. The hyperthyroidism was successfully corrected by these two operations. The tissue removed was reported as "hyperplastic thyroid, Graves' disease type, with chronic thyroiditis." In February, 1935, dilatation of the larynx was attempted with no benefit. On October 18, 1940, re-examination of the larynx revealed "both cords paralyzed." On October 29, 1940, Fiertz began electrotherapy and on December 6, 1940, laryngoscopic examination revealed that "the right cord moves on galvanic and faradic stimulation." On February 3, 1941, both cords were moving and the tracheotomy tube was removed. The patient received thirty-seven electrical treatments between October 22, 1940, and January 31, 1941. In brief, this patient had a bilateral abductor paralysis before any surgery was performed. After seven years electrotherapy was instituted. Vocal and breathing disability was corrected and the tracheotomy tube was removed.

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### SEVEN ELECTED TO MENTAL HYGIENE GROUP

Dr. George S. Stevenson, medical director of the National Committee for Mental Hygiene, has

man of the American Red Cross. Other new members include Dr. Lauretta Bender,

psychiatrist at P. Gayle, Jr., of Social Security, Kubie of the N. Hygiene, Dr. Thomas A. C. Rennie of Cornell University, and Miss Mildred C. Scoville of the Commonwealth Fund.

# HUMAN TOOTH INJURIES

OTHO C. HUDSON, M.D., Hempstead, New York

THE question of a human bite is of enough importance to stress the value of educating the public on early and adequate treatment and to refresh the minds of the doctors on the end results of untreated and maltreated cases.

Cauterization as treatment of animal bites is well known. However, the morbidity is longer and the deformities are greater from human bites.

Trauma by a human tooth occurs by actual biting or by a blow against the teeth. The trivial wound is followed by a virulent destructive lesion, due to the action of the organisms present in the mouth, with a rapid spread along the tendon

hand swells, and dusky red color appears. Soon a thin, gray, malodorous discharge begins to run from the wound. Pain on movement of the finger indicates the progression of a septic arthritis. The patient develops moderate fever and malaise, and finally appears in the hospital three to four days after the injury. At this time the whole dorsum of the hand is found to be swollen and red. Pus, similar in odor to that of a lung abscess, exudes from the laceration on pressure, either about the knuckle or on the anterior surface of the metacarpophalangeal joint. Motion of this joint is restricted and

TABLE 1.—EIGHT CASES OF HUMAN TOOTH INJURIES AT MEADOWBROOK HOSPITAL

Patient	Age of Wound	Site	Treatment	Result
M. Y.	6 days	Fourth metacarpal head	Débridement	50 per cent limitation of motion of fourth finger. 25 per cent loss of use of middle finger. Hand grip normal
R. R.	3 hours	Middle finger	Débridement	Complete function
J. L.	5 weeks	Middle finger	Amputation of hand	Loss of hand
N. F.	4 days	Third metacarpal	Amputation of metacarpal	Limitation of extension of fifth finger. Poor hand grip
J. W.	1½ hours	Fifth finger	Débridement	Complete function
W. K.	4 days	Fourth metacarpal head	Amputation of metacarpal	Limitation of motion of remaining fingers
P. H.	1 day	Over olecranon process	Incision and drainage	Complete function
T. J.	6 weeks	Third metacarpal	Amputation of metacarpal	Limitation of motion of remaining fingers

TABLE 2.—SIX CASES OF HUMAN TOOTH INJURIES AT NASSAU HOSPITAL

Patient	Age of Wound	Site	Treatment	Result
W. S.	4 hours	Fourth metacarpal head	Débridement	Complete function
C. G.	2 hours	Third metacarpal head	Débridement	Ankylosis of metacarpophalangeal joint with 50 per cent limitation of motion of interphalangeal joints of that finger
S. K.	9 days	Third metacarpal head	Drainage	Ankylosis of finger
J. O.	3 hours	Index finger	Débridement	Complete function
H. Mc.	5 hours	Fourth metacarpal head	Débridement	Complete function
G. W.	3 hours	Third metacarpal head	Débridement	Slight limitation of extension of finger

sheaths. Bites about the hand are more serious than those about the ear, face, or arm.

The organisms are streptococcus, staphylococcus, fusiform bacillus, and spirochete of Vincent. Their growth is anaerobic.

Welch<sup>1</sup> describes the clinical course of these bites as follows: "The impact of the tooth produces a laceration over the knuckles. It is tiny but deep, frequently penetrating the extensor tendon and usually entering the joint. The patient notes little discomfort for from six to twelve hours. Then the dorsum of the finger and

painful. Lymphangitis is not usual. With surgery the purulent discharge gradually diminishes and finally the incision closes in two to three weeks. Commonly about a week after the initial drainage, the amount of pus increases and the temperature begins to rise. An x-ray shows arthritis with osteomyelitis of the proximal phalanx and of the head of the metacarpal. Further drainage of the joint may result in improvement, but usually amputation of the finger and head of the metacarpal is required."

Treatment is thorough cleansing with the fingers flexed, radical débridement under tourniquet, and immobilization. Flooding the wound with zinc peroxide in distilled water is indicated.

Welch, reporting from the Massachusetts

Read at a joint meeting of the Nassau Surgical Society and the Nassau County Medical Society, March 31, 1942, Garden City, Long Island.

<sup>1</sup>Welch, C. E.: New England J. Med. 215: 901 (Nov. 12) 1936.

General Hospital, states that one in ten patients will require amputation if treated in twelve hours, while one in three will require amputation if treated from one to seven days later. An additional one-third of the patients, when treated late, have stiff fingers.

Seven cases were treated under eight hours after occurrence and seven cases were treated after twenty-four hours. Of the seven cases that were treated early, five had good function, one had ankylosis, and one had limited movement. Of the seven cases that were treated late, five lost a member or portion of a member, one had limited motion, and one had good motion of the elbow.

In summarizing the treatment of human bites it can best be stated that they are all serious lesions and require early radical débridement plus immobilization. The use of iodine in the wound, hot soaks, or minor cauterization plays no part in their treatment. All reported cases show the destructive surgery needed to cure the patient when treatment begins late. The time limit for adequate surgery is within the first few hours after the accident only.

It behooves the physician who sees these patients early to carry out the proper therapy so that the amputations are fewer and the morbidity is decreased.

Since the opening of Meadowbrook Hospital there have been eight patients admitted for human bites. Seven patients were male and one female. Three were Negroes and five white. (See Table 1.)

At Nassau Hospital we had six patients. All were males and were white. (See Table 2.)

TABLE 3—COMBINED DATA ON CASES IN TABLE 1 AND 2 (14 patients, 13 male, 1 female, 11 white, 3 Negro)

From Time of Injury to Treatment	
1 1/2 hours	1 case
2 hours	1 case
3 hours	3 cases
4 hours	1 case
5 hours	1 case
1 day	1 case
4 days	2 cases
6 days	1 case
9 days	1 case
5 weeks	1 case
6 weeks	1 case
Portion of Extremity Involved	
Forefinger	1 patient
Middle finger	2 patients
Fifth finger	1 patient
Third metacarpal head	5 patients
Fourth metacarpal head	4 patients
Olecranon process	1 patient
Types of Treatment	
	7 cases
	4 cases
	1 case
	2 cases
All amputations had numerous incision and drainage procedures	
Results of Treatment	
Complete function	7 cases
Loss of hand	1 case
Extreme limitation of motion	3 cases {débridement 2 cases amputation 1 case
Slight limitation of motion	2 cases {amputation 1 case débridement 1 case
Stiff finger	1 case
Time of Treatment and Results	
1 1/2 hours	Complete function
2 hours	Ankylosis of finger
	1 complete function
3 hours	2 complete function
	3 slight limitation of extension
4 hours	Complete function
5 hours	Complete function
1 day	Amputation of metacarpal
4 days	1 amputation of metacarpal
	2 amputation of metacarpal
6 days	Amputation of metacarpal
9 days	Ankylosis of finger
5 weeks	Loss of hand
6 weeks	Normal use of elbow

NEW DENTAL BUR TO BE PRODUCED

A new type of dental bur with a chrome finish, which will wear at least 50 per cent longer than the steel type now in use, will soon be put into production, members of the Dental Instrument and Bur Industry Advisory Committee reported at a recent meeting, according to the War Production Board.

Laboratory studies on the chrome process have been completed, and actual production of the new specialized rs said within

Because of its long wearing qualities, industry

members said that the chrome bur will materially reduce 1944 requirements for dental burs, which are now 40 per cent above current rate of shipment.

Output of dental burs has nearly tripled in the last three years, committee members said, and the industry is continuing to expand its facilities. However, military requirements have grown even more rapidly because of the possibility of loss or damage involved in shipments made to combat areas and use under war conditions. Principal obstacles hampering output of burs are manpower shortages, rather than a lack of facilities, they pointed out.

INDEFINITE DEFINITIONS

Shot—that which, if some people have more than one, they're half—Louisville Courier—Reprinted from Illinois M J

PRIVILEGED CLASS

Children have become such an expense," reports Dr. W. H. Bradford of Dallas, "that only the poor can afford them"—Texas State J W

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the October 1 issue and will concern "Treatment of Drug Addiction."

### Use of Sedatives and Narcotics

DR. McKEEN CATTELL: There are many special considerations in connection with the use of drugs for the purpose of producing sedation and sleep.

Manifestly, we cannot cover the whole field of the sedative drugs at this session. Rather, we plan to take up the subject from the standpoint of special problems which are met with in their therapeutic use. These problems differ in different fields of medicine, and today we will take up the subject from the standpoint of the internist, the psychiatrist, and the pediatrician.

I will ask Dr. Gold to open the discussion.

DR. HARRY GOLD: The hypnotic and narcotic agents which we might perhaps pay most attention to this morning will be the ones with which we are all most familiar—the barbiturates, chloral hydrate, bromides, paraldehyde, morphine, pantopon, dilaudid, and possibly the new synthetic, demerol.

I should like to refer very briefly to a few matters about the hypnotics which were discussed in one of the previous conferences. The terms "hypnotic" and "sedative" represent phases of the action of one and the same drug and not different drugs. The same action which causes sleep causes the sort of change we call sedation under other circumstances. Sometimes the doses are different. Although the basic action is the same, from the practical standpoint some drugs are not particularly suitable for use as sedatives during the day. For example, the rapidly acting barbiturates are not very useful for that purpose. They produce sharp peaks of effect, and the patient who needs to have his nerves quieted throughout the larger part of the day will find such a pattern disturbing. Pentobarbital, for example, is not particularly appropriate as a sedative during the day, whereas phenobarbital and barbital are because of their slow and lasting effect. With the exception of dosage all other statements of differences between hypnotic and sedative drugs break down from the practical standpoint when examined critically.

There is the question of qualitative difference

between the action of such hypnotic agents as barbital, chloral, and paraldehyde. Is the pattern of their effects upon the brain different? There is some experimental evidence on this point. If a hen is given a fairly large dose of chloral hydrate she may fall off the perch but she may not fall asleep. With a large dose of barbital, she falls asleep and stays on the perch. Here are two depressant drugs, one having a predominant sleep-producing action in which the postural reflexes are preserved, and with the other the postural reflexes may be lost with a dose insufficient to cause sleep.

There are certain peripheral actions of the barbiturates which distinguish one from another. For example, large doses of barbital and phanodorm tend to block the peripheral vagal endings, whereas large doses of phenobarbital fail to block them. Concerning what this may have to do with the patterns of effects in humans we have practically no information.

There are factors regarding the hypnotic agents which sometimes give the appearance of differences in their action; one of those factors is the speed of absorption. An hypnotic which is quickly absorbed is likely to produce an effect which is not obtained from one slowly absorbed. The sharp peak of effect is often not obtained with the barbiturate which is more slowly absorbed. The peak creates the sensation of glow and warmth. We are all, perhaps, familiar with it in relation to alcohol. I am inclined to think that patients who perceive a qualitative difference between phenobarbital and pentobarbital sodium do so because of the differences in dosage and the speed of absorption. In this connection we may note that the soluble form of the barbiturate is much more readily absorbed than the insoluble acid.

Individual variation in tolerance is very marked among all the hypnotics. A quarter of a grain, or 15 mg., will put one person to sleep and 2 grains, or 120 mg., may leave another almost without appreciable depression. That is a matter of some importance. It relates particularly to the routine



administration of a fixed dose of these compounds in making the night ward rounds

There is a tendency to give everybody the same dose. Perhaps it is all right to start with the same dose, but if we do it every night, we are not learning from our experiences. I wonder how often we analyze our experiences in our routine "hypnotic" rounds.

Here is one experience. Twelve patients between the ages of 40 and 80, suffering with insomnia, were given 100 mg. of phenobarbital sodium together with 5 mg. of morphine sulfate by hypodermic injection. A careful record kept during the night and also the following day yielded the following information: 5 of the 12 slept satisfactorily, 2 developed extreme excitement with delirium and were difficult to manage, 5 vomited, 1 had a scarlatiniform rash in the morning, and 2 itched so badly all night that they thought they did not sleep on account of the itching.

That is a bad record for a routine form of treatment of sleep difficulties of a minor variety. It might not be so bad for some of the major sleep problems encountered by the psychiatrists.

The slower acting barbiturates show cumulation. Phenobarbital and barbital are cumulative drugs.

After a patient has been taking 30 or 60 mg. of phenobarbital once or twice a day for some time there are apt to occur, although not in all people, symptoms of cumulation. There are apt to arise confusional states which we will fail to recognize for what they are if we do not bear in mind the problem of drug cumulation. This problem is less important in the case of pentobarbital or secobarbital, which is a more rapidly excreted agent, but there is cumulation in the case of these also.

Another point is the matter of dependence. Are these habit-forming? Dependence occurs with all depressant drugs. I don't know any in common use in which as the result of prolonged use there fails to arise a state of irritability and emotional unrest which differs both in its intensity and sometimes also in its quality from the state for which the barbiturate or other hypnotic was first used. I think that it is—I should like to have the opinion of psychiatrists about that—a response to the phenomenon of depression by a drug rather than due to the character of the drug. An individual who is kept in a state of more or less sustained depression by some agent is liable to develop an adaptation to that state and, as a consequence, may develop abnormal symptoms when the drug is discontinued. Irritability and emotional unrest are the usual symptoms. The degree differs with different people and the quality sometimes differs with different drugs. Certainly

it is different in the morphine group from that of the barbituric acid group.

The effect of prolonged administration of hypnotics and the effect of withdrawal was pointed out in a paper, I think by Dunning, from this hospital, in which he described several cases of convulsions following the rapid withdrawal of the barbiturates after prolonged administration.

There is just one more point about the hypnotics which I should like to make, and that is in the form of a plea for greater restraint in their use. I think that in this hospital more than 10 per cent of all prescriptions in the Outpatient Department are for hypnotics. The percentage of patients receiving them is much higher.

Is Mr. Clark around? Is that about right?

MR. D. A. CLARK: Yes.

DR. GOLD: I should like to venture the guess that only a small proportion of these prescriptions are essential. There is a tendency to prescribe phenobarbital when one is hard pressed for something to do.

There is a question of permanent injury from the hypnotics. I wonder whether anyone here has ever encountered a case of permanent injury from the barbiturates. I don't remember seeing any record of such an effect in the literature. We have some cats in the laboratory which show permanent injury, irreversible damage of the central nervous system produced by a relatively new barbiturate. I don't know that it applies only to that hypnotic. It occurred in about 8 per cent of the animals which recovered from a fairly large dose. It seems to be a more or less diffuse injury of the central nervous system with disturbances in gait and reflexes. It is a bizarre picture. In one of these animals it is present now, one hundred and ten days after the dose was given. It fell asleep, remained asleep for about twenty-four hours, woke up, and never recovered from these residual symptoms.

DR. CATTELL: The discussion will be continued, from the standpoint of the pediatrician, by Dr. Levine.

DR. SAMUEL Z. LEVINE: When I was asked to discuss sedatives and narcotics, I assumed that they fell into the general group known as the central nervous system depressants. In that group, I suppose, if one wanted to be complete in his assembly of drugs, he might include the analgesics, the preanesthetics, and the anesthetics. The total number of central nervous system depressants which are used in children is relatively small.

Generally speaking, children are more sensitive to all types of central nervous system depressants than adults, particularly to morphine and its derivatives. With the exception of the latter, the dosage for these types of drugs in children is the

same as that used for other drugs, the dosage being calculated by Clark's rule based on weight, or by Young's rule based on age, or some modifications thereof. I will consider only the drugs in common usage in children.

For analgesia, the salicylates are commonly used, in the form of acetylsalicylic acid, to relieve the rheumatic type of pain. They are not used for other forms of pain, because of their masking action on fever, since we wish to know whether the fever is due to some organic condition or not. The dosages run up to 2 to 4 Gm., or 30 to 60 grains a day, given usually at four-hour intervals. The drug is usually administered either in tablet form for older children or dissolved in a small amount of water for younger children. We do not give sodium bicarbonate with it.

For other types of pain codeine is most commonly used in younger children, and, if the pain is intense, morphine for older children. Analgesics are practically never employed in infants under a year. I presume infants do have pain, but we don't want to mask the cause of the pain by giving analgesics.

The sedatives are used, as Dr. Gold mentioned, to allay pain, to induce sleep, to diminish restlessness and irritability, and for all related types of abnormal behavior.

Of the barbiturates phenobarbital is more frequently employed than any other. As such, it is given by mouth or as soluble phenobarbital parenterally. The dose ranges from 15 to 30 mg. or from  $\frac{1}{4}$  to  $\frac{1}{2}$  grain, given at intervals of four to six hours. There may be some cumulative effect, even at six-hour intervals, since, as Dr. Gold pointed out, phenobarbital is slowly absorbed and excreted—much more so than in the case of pentobarbital, but nevertheless we employ only the former barbiturate. The reason, of course, is that there is a big margin of safety in its use, except for the occasional case of idiosyncrasy. We do occasionally see youngsters who develop fever, excitability, and, more frequently, a rash when the larger dosages are used. It is interesting that the rash may appear after the use of phenobarbital for several days, then disappear, to recur even after a week of drug therapy. I don't know if Dr. Gold or Dr. Cattell will offer an explanation of this reaction, but it has been reported. It should be remembered that these children are not given phenobarbital in tablet form, but in solution by mouth, or by the teapoc. The reaction is increased by mouth if the dose is from 3

in milk. Only rarely is it necessary to give it as an oil retention enema by rectum. If chloral hydrate is ineffective, paraldehyde may be given in dosages of from 1 to 4 cc. or from 15 to 60 grains by rectum in a small amount of tap water.

The use of morphine is limited to very apprehensive children with cardiac disease who are restless and cannot sleep, to preanesthetic use in older children, and for severe pain following operations. The dosage is calculated by either Young's or Clark's rule for infants over a year.

For relief of cough by a sedative drug, codeine is used almost exclusively in infants over a year. The same rules for dosage apply as in the case of morphine. In children under that age drugs are rarely, if ever, required for cough. In infants codeine, as well as morphine, is said to be more poorly tolerated than in older persons, although there is no good evidence that this is so.

For convulsions in epilepsy, the central nervous depressant drug most commonly used as an anti-convulsant is phenobarbital, in the dosage previously outlined. If it is ineffective, dilantin sodium is given in a dosage of 0.1 Gm. a day with a meal or directly after a meal, and is increased gradually up to 0.3 Gm. three or four times a day. The main toxic manifestation most frequently encountered is hyperplasia of the gums.

In other forms of convulsions of infants and children we have specific measures which do not require the use of the sedative group of drugs. I will merely mention them. In the convulsions of tetany, calcium salts are specific. Sedatives are resorted to only as adjuvants. Hypoglycemic convulsions require glucose. In the convulsions associated with acute glomerular nephritis with hypertension, magnesium sulfate is the therapeutic agent of choice. In convulsions which are uncontrollable by phenobarbital and not epileptic in nature, resort may be had to morphine, and even to lumbar puncture. As a preanesthetic phenobarbital is the drug of choice in young children, and morphine in older children.

In summation, then, the chief drugs, exclusive of anesthetic agents, which are used as central nervous system depressants in children are, in order of decreasing frequency, phenobarbital as well as the form of barbitol, the salicylates, chloral hydrate, morphine, paraldehyde, and dilantin sodium.

Before going on with the general remarks from Dr. Cattell, the stand of the psychiatrist. It is certainly a physician to do as possible, but the other special results and excessive

use of sedative medication. I have come to feel that one's therapeutic enthusiasm must be tempered with considerable caution. The psychiatrist, in contrast with the internist, deals largely with long-term and chronic problems, rather than with acute issues requiring sedation. In psychiatry there are several general categories of patients who need sedative medication. The largest single group are those patients who complain of insomnia from one cause or another, the two main causes being psychoneurotic disturbances of some kind and depressive disorders. In addition to those we have emergency situations made up of various kinds of excitement.

Most characteristic are the manic excitement, also the schizophrenic excitement, organic excitement, etc. There are also delirious reactions to be considered, and certain organic conditions including the large group of elderly, senile patients, who also have sleep difficulties.

In considering sleep disturbances it is necessary at the outset to remember a few basic facts. As Dr. Gold has pointed out to you, there are relatively fast-acting sedatives and there are relatively slow-acting sedatives. In the study of insomnia itself it becomes necessary to know not only how much sleep a patient is getting but also in which part of the night it is characteristically disturbed.

Three types of sleep disturbances can be defined. Some patients fall asleep very slowly, after tossing about for an hour or two, in others the sleep disturbance is primarily that of complete awakening around four or five in the morning, and in still others there is an intermittent fitful kind of sleep which runs through the whole night. One's choice of sedation in the insomnia problem, therefore, must be dependent upon the kind of insomnia which the patient presents.

As you know, generally the psychoneuroses are long-continued disturbances, and we are always reluctant to have any psychoneurotic patient embark upon a sedative career. Particularly is this true in the hospital, where we have other means for achieving relaxation, such as prolonged baths or packs, physiotherapy, massage, and exercise.

It may interest you to know that in some psychiatric hospitals no sedatives are ever employed for any situation whatever. It is very striking in a hospital in which such an atmosphere prevails that a great many sleep difficulties take care of themselves. The attitude of confidence on the part of the staff that the problem will resolve itself without the use of sedation is very important.

We use primarily the barbiturate group in our medication, recognizing these facts about them: (1) that a patient develops tolerance after a long

period of time and it usually becomes necessary to increase the dose to produce the same effect, and (2) that accumulation of the drug may develop, which he may feel as grogginess, drowsiness, or difficulty in concentration.

I think most commonly we use simple barbitol. It is cheap. It is about as efficient as any of the group. It is a drug which acts relatively slowly. It is not one which will put a patient quickly to sleep, but it is one which is likely to hold his sleep after its major action has been obtained.

The quickest-acting barbiturate I use is secobarbital. Patients regularly tell me that within fifteen minutes to half an hour they are sound asleep after using that barbiturate. It may not hold them as long as barbitol or some of its other derivatives.

Then we have that large group of patients who combine insomnia with a great deal of restlessness and agitation throughout the day. For them also it becomes necessary at times to provide some sort of chemical relief, and once more barbitol in small divided doses, 0.16 Gm. three times a day, is the most effective chemical means of affording them relaxation.

Sodium amylal has probably the most dramatic effect on motor restlessness. It is quite striking to see a catatonic stupor respond to sodium amylal. The motor rigidity disappears and relaxation appears. Patients talk who for weeks have been mute. We not infrequently use that drug intravenously in 0.4 to 0.6 Gm. doses given slowly over a period of fifteen minutes to a half hour, watching the pulse, the blood pressure, and the eyes for danger signals.

For acute excitement, our drugs of choice are paraldehyde and chloral hydrate. That is particularly true in delirious reactions and especially so in alcoholic delirium tremens, in which paraldehyde is by all odds the drug of choice. We use here perhaps more heroic measures than in general practice—15 cc. of paraldehyde by mouth and as much as 20 to 25 cc. by rectum if necessary. It is infinitely preferable in emergency cases to give a large initial dose than to have to repeat the dose three hours or six hours later because the amount was inadequate to quiet the excitement in the beginning.

When one turns to the group of elderly senile patients, a word of caution is necessary. These patients do not tolerate sedatives as well as younger people. Drugs may accumulate more readily in them because of renal inadequacy. They are also more prone to toxic manifestations. Therefore, we prefer not to use strong sedatives in elderly, senile patients. Perhaps the least troublesome we have found is a drug called sedormid, which seems to work very well in these individuals.



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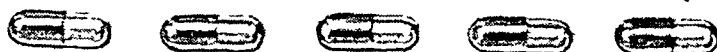
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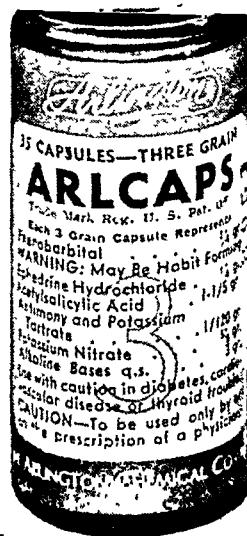


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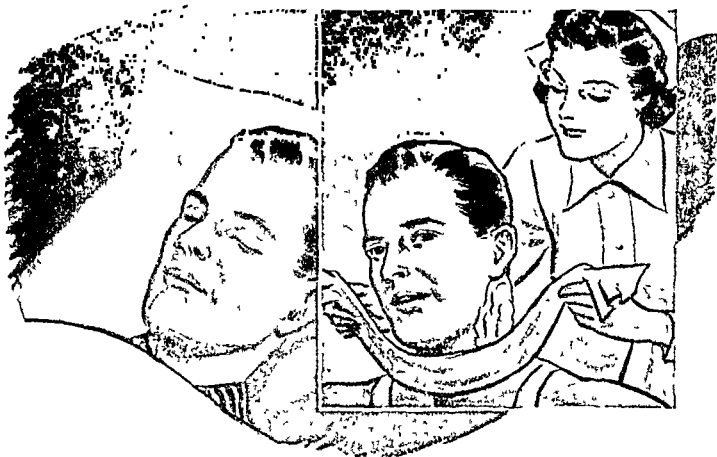
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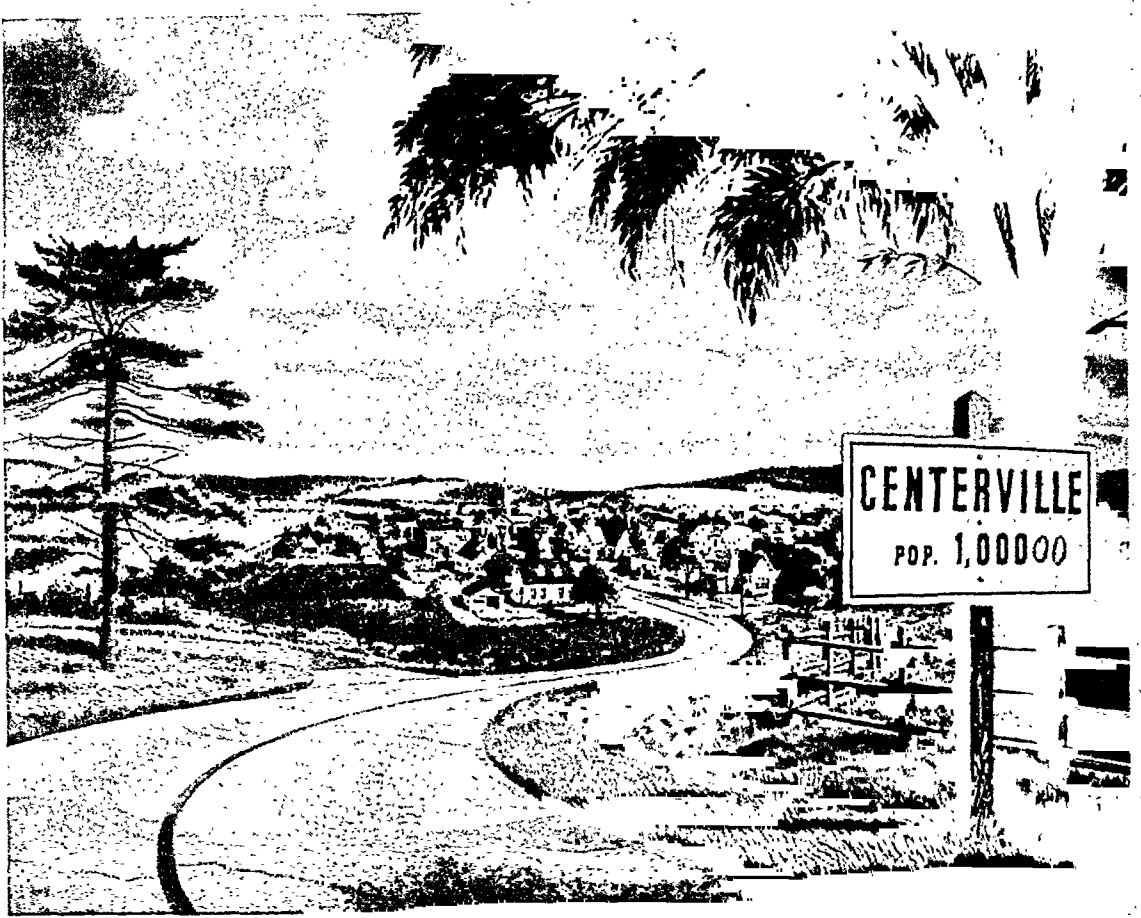
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## *Editorial*

### Postwar Medical Service

With the approval of the Surgeons General of the Army, Navy, and Public Health Service, a questionnaire has been sent by the A M A to 3,000 of the 50,000 medical officers in the armed services, as a pilot experiment. It is sought to define the size, scope, and type of postgraduate instruction at the various levels of intern, resident, and specialist training for the postwar period.

Nine hundred and twenty-seven replies had been received by June 1 of this year.

"Questionnaires were divided into four groups for study on the basis of licensure or medical school graduation. In general, licensure was used, since there was a section that dealt with licensure. However, recent medical graduates who entered the armed forces without a license to practice medicine were classified in the year they would normally have become licensed. Group 1 consisted of those licensed from 1937 to 1943. Group 2 consisted of those licensed during the years 1930 to 1936. Group 3 consisted of those licensed during the years 1920 to 1929, and Group 4, the oldest group, consisted of those licensed before 1920. There were the following number of returns in each group

	Number	Percentage
Group 1	400	43
Group 2	323	35
Group 3	168	18
Group 4	36	4
Total	927	100%

Greatest interest in postwar medical education was evident among the youngest officers—those, for example, who graduated or would have graduated between the years 1937–1943. Three hundred sixty-four, or more than 90 per cent, want some additional training. Among the men 35–42 years of age 74 per cent wanted further education. Of those who graduated between 1920 and 1929 three-fourths wanted additional training. And of those, the smallest group, who graduated before 1920, one-third were already specialists, and few desired more training.

In the matter of industrial medicine, only 56 per cent of the graduates between 1937 and 1943 were interested. Of the group who graduated in 1930–1936, 108 men out of 323, or about one-third, were attracted

to this type of practice. The older group, those who graduated from 1920-1929, were interested only to the extent of 27 per cent; of these 17 wanted full-time work and 28 part-time appointments. The oldest group, those who graduated before 1920, were very little interested, only 6 out of 36 desiring industrial practice.

Licensure and practice interested a large proportion of the medical officers. In the youngest group, graduates of 1937-1943, 41 per cent planned to re-engage in private practice in their previous locality. In Group 2, 73 per cent wanted to return to their former places of practice. In Groups 3 and 4—1920 and earlier graduates—80 per cent wanted private practice again in their prewar localities.

Regarding economic considerations a wide variety of answers came in, some desiring general practice, some group practice, but of the youngest group only 5 per cent wanted to remain in government service. In the group of graduates of 1930-1936, 10 per cent would stay in government service and in the group who graduated in 1920-1929, 17 per cent would remain in government employ. The oldest group was most interested in remaining in government service. About 30 per cent of this group would do so.

The full report of Lt. Col. Harold C. Lueth, of which the foregoing is an incomplete synopsis, merits careful reading and study by all who are concerned with the interests and needs of returning medical officers. The report of the A.M.A. Com-

mittee on Postwar Medical Service had this to say:

"The committee's discussions ranged widely over the field of postwar medical service. Already, with the approval of the Surgeons General of the Army, Navy, and Public Health Service, a pilot questionnaire was sent to 3,000 medical officers in these three services. This was carried out by a subcommittee consisting of Drs. Abell, Mason, and West, who had the invaluable assistance of Lieutenant Colonel Lueth, Surgeon General's Liaison Officer, who has an office in the headquarters of the American Medical Association. At the meeting on April 29, Lieutenant Colonel Lueth was able to present some very illuminating data. Authorization has now been obtained to send a somewhat revised questionnaire to all the medical officers in the Army, Navy, and Public Health Service. I think it is safe to say that this questionnaire will receive a very favorable response. It will make the medical officers feel that they are not forgotten men. Obviously, the data derived from these questionnaires will be of fundamental importance in determining what direction the committee's activities should take in meeting the needs of the returning medical officers.

"The data from these questionnaires should indicate the size, scope, and type of postgraduate instruction at the various levels of intern, resident, and specialist training, and of other forms of postgraduate instruction required. The Council on Medical Education and Hospitals of the American Medical Association is already at work in this field."

This study and those which will undoubtedly follow it are highly commendable and should point the way to provision of necessary facilities to accommodate the needs of returning medical officers after the war. All are urged to give this report the attention and study it deserves.

## First Things First

Medicine has progressed, developed, flourished under nearly every kind of government which has had the common sense to let it alone. It has developed great leaders, good hospitals, and has conquered many of the world's greatest disease scourges.

As a nation we are living longer, living healthier lives than almost any comparable group of people. This objective has been reached by medicine in spite of the fact that housing, sanitation, distribution of national resources, working conditions, and wages, all accessories to the promotion of the national health and welfare to which the

government of this country is constitutionally pledged, have lagged far behind.

What might be expected, for example, if the government instead of arousing the public to expect medical care through social security legislation, were to furnish American medicine with the help it needs by securing to the people proper housing, good nutrition, proper sanitation, abolition of slum areas, unfavorable working conditions, and adequate earnings *after* taxation?

It is our opinion that most people consider medicine a human institution, recognize the fact that as a human system it has faults

but that it has kept the people of this country well, made them longer lived, and provided them with a good doctor for nearly every occasion when a doctor was needed. It has *not* given them politics or argument when they needed medicine. It has not promised them social security or any other panacea when they needed surgery. It *has* undertaken to educate and train good physicians and surgeons. That it has succeeded is evidenced by the medical care the troops are receiving, by the kind of medical care the civilian population is receiving in spite of the withdrawal for service with the armed forces of thousands of the best trained men and women available.

And all this has not increased the general morbidity rate. The quality of the public health still remains high. People still continue to live longer—except the doctors.

We believe that the greatest benefit to the people and the greatest help to the physicians would be derived by the attention of

government to the first things within its proper province which could *assist* American medicine to better its record of achievement in the promotion of the public health. Unification of its sprawling departmental dabbling in medical affairs has been urged for many years—to no purpose, apparently.

A little cleaning of the government house, a little putting in order of existing government affairs as they relate to medicine, seems to us to be indicated. Medicine, as we said, has flourished when governments have had the sense to let it alone. What could it not do with a little real help in the proper places, a little real representation in the Cabinet, for instance?

One reason for the very real successes of military medicine is the frequency with which commanding officers ask the advice of and are guided by their medical officers. Experience has proved the practical, life-saving value of this procedure. Maybe there is a moral here somewhere.

### Serum Albumin, a Blood Substitute

Research for blood substitutes continues without surcease. There is no need to detail the value of blood and plasma for medical and surgical emergencies, yet it is readily apparent that these precious fluids are not unlimited, and are not always available at the very moment when time is of the essence. Dried human plasma is one effective answer to this problem, but simpler is the substitution of a more elementary substance which can readily restore a falling blood volume to normal. The fractionation and purification of the various serum proteins by E. J. Cohn and his coworkers have been a distinct contribution and advance in the field of blood substitution.<sup>1,2</sup> The chemical and biologic properties of serum albumin of related species have also been investigated from the same viewpoint.<sup>3</sup>

The chemical properties of human and bovine serum albumin are almost the same. The size, shape, and electric charge of both molecules differ so slightly that a mixture of both proteins is quite homogeneous. However, they differ in chemical constitution, crystallization, and in immunologic properties. The osmotic pressure of both albumins is almost the same, a physical property useful in the treatment of shock. Serum albumin is the most stable and soluble of the

serum proteins, and a 25 per cent solution has a low viscosity.

Experiments in dehydration and blood loss by venesection to the point of a 20 per cent reduction of blood volume demonstrated successful restoration by the administration of a 25 per cent solution of serum albumin in adequate amounts. This solution is well tolerated when injected at the rate of 5 cc. per minute. When the albumin is not precipitated with scrupulous technic, epigastric pain and precordial distress have been known to result from its administration. Wheals occasionally result from the infusion of serum albumin. Fluid is drawn into the circulation with mathematical precision. Each gram of albumin attracts 17.4 cc. of fluid into the circulation (13.2 to 24 cc.). A unit dose of 25 Gm. of albumin may confidently be expected to increase the circulating plasma by about 450 cc. Serum and urinary potassium are virtually unaffected by such injections. Significantly, there was no essential difference between bovine and human albumin in their ability to draw fluid back into the circulation.

Human serum albumin has already been tried and tested in the sphere of military medicine.<sup>4,5</sup> Its use should be extended, for it is an effective agent in restoring the blood volume, and has

been used in the treatment of nephrosis. For such purposes it is as satisfactory as blood or plasma.

Its concentrated form and its easy storage properties constitute definite advantages. If further studies prove that its chemical cousin, bovine serum albumin, with its kindred physico-chemical and physiologic properties, is safe for human use, the field of blood substitution bids fair to be tremendously extended by the ad-

dition of a new, readily available, and relatively unlimited source of serum albumin.

<sup>1</sup> Cohn, E. J.: *Chem. Rev.* 28: 395 (Apr.) 1941.

<sup>2</sup> Mudd, S., and Thalheimer, W.: *Blood Substitutes and Blood Transfusion*, Springfield, Ill., Charles C Thomas, 1942.

<sup>3</sup> Heyl, J., Gibson, J., and Janeway, C.: *J. Clin. Invest.* 22: 76 (Nov.) 1943.

<sup>4</sup> Woodruff, L., and Gibson, S.: *U.S. Nav. M. Bull.* 40: 791 (Oct.) 1942.

<sup>5</sup> Newhouser, L., and Lozner, E.: *U.S. Nav. M. Bull.* 40: 796 (Oct.) 1942.

## The Postcholecystectomy Syndrome

The removal of a gallbladder, diseased or otherwise, frequently fails to relieve the patient of his symptoms. The feared, familiar colic with its typical radiation may still haunt the sufferer. These attacks of pain may be accompanied by nausea, vomiting, transient jaundice, and occasionally fever. Abdominal tenderness and mild icterus may be among the residual physical signs. This postoperative symptom complex is so definite that it has been entitled the postcholecystectomy syndrome.

Statistics show that 30 to 40 per cent of those, who have undergone cholecystectomy continue to suffer from this syndrome, the causation of which, until recently, has been somewhat of an enigma. A pertinent operative finding in this group is the frequent failure to discover calculi in the absence of pathology in the gallbladder, in spite of preceding attacks of typical colic. It is refreshing to learn that the modern surgeon is sufficiently versed in physiology to direct and develop his surgical technic along the lines of functional pathology and devise operative procedures designed to correct the altered physiology.<sup>1</sup>

The cause of the postcholecystectomy and perhaps the precholecystectomy symptoms may be due to a dyskinesia of the biliary sphincter mechanism. The distribution of a sphincter system along the biliary tract and the importance of its malfunction has been thoroughly emphasized in recent literature.<sup>2,3,4</sup> The nature of the symptoms is dependent on which sphincter mechanism is disturbed. The spasm itself may be initiated by local or intrabiliary causes such as residual calculus, infection, or traumatic stricture. In other cases the dyssynergia apparently

has a functional, not an organic basis, akin to spastic colitis. The hepatic, biliary, or pancreatic sphincter, or the sometimes present ampullary sphincter may cause varying syndromes. Spasm of the hepatic sphincter causes hepatic pain and jaundice. It is evident that spasm of any sphincter may increase the intraductal pressure to the point of producing colic. Removal of the gallbladder will yield little relief if the source of the pain and other symptoms, the abnormal sphincter, is left undisturbed. Some gain ultimate relief by the physiologic adaptation of the sphincters and bile ducts subsequent to the cholecystectomy, for spasticity is not necessarily a permanent condition.

Facts have been presented to show that dyskinesia of the sphincter mechanism plays a leading role in the production of certain types of biliary disease. These symptoms may persist after cholecystectomy. If medical treatment is of no avail and investigation leads to the conclusion that dyssynergia is the basis for this symptomatology, surgery should be considered. If no pathology is revealed after careful exploration, operative procedures may be indicated to relieve the sphincter spasm. Surgical technic may take several forms<sup>1</sup> and should be familiar to internists as well as to surgeons for the proper comprehension and amelioration of a trying and subtle syndrome.

<sup>1</sup> Colp, R.: *Bull. N.Y. Acad. Med.* 20: 203 (April) 1944.

<sup>2</sup> Ivy, A. C., and Sandblom, F.: *Ann. Int. Med.* 8: 115 (Aug.) 1934; Ivy, A. C., and Goldman, L.: *J.A.M.A.* 113: 2413 (Dec. 30) 1939.

<sup>3</sup> Hill, H. A.: *Radiology* 29: 261 (Sept.) 1937.

<sup>4</sup> Bergh, G. S., and Layne, J. A.: *Am. J. Physiol.* 128: 690 (Mar.) 1940.

# REGIONAL ANESTHESIA IN THE ARMY

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FROM time immemorial, pain has been the scourge of humanity. Its relief will be forever the hope of millions and the perennial task of medicine. To the anesthetist, pain presents a daily challenge among the civilians and the military alike. Modern medical advances now afford the pain-stricken a choice in their relief: either a local or a generalized depression of their sensorial apparatus. For many reasons, it is often an advantage, if not a necessity, to select the former, better known as regional anesthesia.

Regional anesthesia is of comparatively recent development, although it received its initial impetus some time ago through the invention of the hypodermic syringe by Charles G. Pravaz in 1851 and its application in the alleviation of pain with morphine by Alexander Wood in 1855,<sup>1</sup> the introduction of cocaine as an anesthetic solution by Koller<sup>2</sup> and Halsted and Hall<sup>3</sup> in 1884, with its intrathecal injection by Corning a year later, and the discovery of procaine by Einhorn in 1904.<sup>4</sup> The most significant strides have been made in the present century with the refinement of old techniques and the introduction of new ones, the preparation of new and perhaps better anesthetic solutions, and, above all, with a more wholesome appreciation of the anatomic limitations and clinical evaluation of the many procedures employed. These advances have been reviewed recently in publications by Tovell,<sup>5</sup> Rovenstine,<sup>6</sup> Odum,<sup>6</sup> Nicholson,<sup>7,8</sup> and Lundy *et al.*<sup>9</sup>

Regional anesthesia, in the broad sense of the word, includes topical application, local infiltration, localized freezing (cryoanesthesia), field block, nerve block, subdural and epidural procedures, and sympathetic ganglion blocks. Its essential features, in contrast to general anesthesia, may be regarded as (1) preservation of consciousness, or, at least, no further depression than before anesthesia; (2) marked decrease or loss of central nervous system irritability, chiefly in the operative field; and (3) minimal interference in the respiratory and cardiovascular systems of the body and their compensatory mechanisms. This, in turn, results in (4) liminal changes in metabolic economy—i.e., gaseous exchange, heat, fluid, and electrolyte balance.

These features may represent advantages which in some (spinal) anesthetics may not be easy to obtain.

To the military anesthesiologist, there may be other notable advantages of regional anesthesia.

These may be briefly enumerated as (1) simplicity and portability of equipment; (2) availability, stability, compactness, and nonexplosiveness of agents employed; (3) wide margin of safety in properly selected cases; (4) freedom of action in attending to mass casualties and preparing them for surgical teams; (5) few or no postanesthetic complications; (6) conservation of personnel in the postoperative care of patients; and (7) ease and relative safety of evacuating patients anesthetized by regional anesthesia.

The competent anesthetist, however, must be mindful also of significant disadvantages of regional anesthesia. These may include the limitation of time of anesthesia imposed on the surgeon, often inadequate relaxation and exposure of the operative field, technical exactitude, and time necessary to perform the various procedures, the necessity of knowing thoroughly the limitations and contraindications of the block, the suitability of the patient for regional anesthesia, possible idiosyncrasy or pharmacologic toxicity to the drugs employed, the presence of multiple wounds, and the presence of infection or trauma near anatomic landmarks of the procedure.

Regional anesthesia, *per se*, has only recently been employed in the alleviation of pain and preparation for surgery of combat casualties of the American Army.<sup>10</sup> It was unheard of in the Civil War and was only occasionally employed in the Spanish-American conflict. In the form of local infiltration anesthesia, it was first fully appreciated in World War I.<sup>11,12,13</sup> Spinal anesthesia also became popular in that conflict,<sup>11,14</sup> being employed for various types of emergency surgery<sup>15</sup> and gassed patients.<sup>16</sup> Other types of regional anesthesia, however, particularly field and nerve blocks and sympathetic ganglion block, have received little or no attention in previous wars. Their advantages have been appreciated by the military surgeon, patient, and anesthetist only since the onset of the present global war. Publications<sup>17,18,19</sup> and personal communications<sup>20</sup> from army anesthetists in the European, African, Far East, and Central and South Pacific theaters of war, as well as from the Zone of Interior, have been plentiful and have served already to emphasize the growing popularity of regional anesthesia. From such reports it may be stated safely that its addition to the anesthetist's arma-

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mentarium has made him more indispensable to his surgical unit.

### Overseas Surgical Installations

Regional anesthesia, of one type or another, is practiced in numbered as well as named hospital units. This fact is not at all surprising when it is realized that trained anesthetists are assigned to such organizations<sup>21</sup> and that certain fundamental equipment, such as procaine, syringes, and needles, are issued to all medical echelons. A series of sixty-seven letters from friends and former student anesthetists trained at Tilton General Hospital<sup>20</sup> has emphasized the desirability and necessity of administering regional anesthesia to their combat casualties. The remarkable and interesting fact is that no comment was forwarded about lack of specialized regional anesthesia equipment, for they have all learned to do their procedures quite satisfactorily with standard items. This should be an instructive lesson for us all.

Many factors determine the type of anesthesia—regional or general—that can be employed in overseas installation. These have been emphasized in previous reports.<sup>21,22</sup> Aside from the anesthetist's own technical ability, perhaps the most significant factors are climate, type and location of surgical unit, and combat conditions. Thus, in England, where regional anesthesia is not popular, it is not commonly employed. In units located in Africa, Sicily, and India, regional anesthesia was not only ideal in some units but also a matter of necessity. Pain relief and preparation for surgery of mass casualties near combat areas in tropical heat with poor vaporization of anesthetic solutions, with the need for early evacuation of patients, presented formidable problems to the anesthetist. While spinal anesthesia was once popular in these areas, local infiltration, as recommended by the Russians, and nerve blocks are the more favored regional techniques now.<sup>20</sup> In the Australian theater of war enthusiasm for regional anesthesia is endemic and depends apparently more upon the anesthetist than on any other factor. Reports from units in the same general locality are conflicting. A few dislike regional anesthesia, saying it is not satisfactory, while others feel it is almost ideal. In all theaters of war, the regional anesthesia techniques are those commonly employed in civilian institutions, the most popular being local infiltration and brachial plexus, paravertebral, and caudal block techniques. Due to censorship, the number of regional anesthetics performed cannot be disclosed. However, it may be stated that preference as well as necessity favors operative rather than diagnostic or therapeutic block procedures.

### Regional Anesthesia at Tilton General Hospital

Regional anesthesia was administered to 2,625 patients at Tilton General Hospital with gratifying results. This number is admittedly small and constitutes but a part of the total group of patients receiving anesthesia. However, many facts have been learned from the regional anesthetics performed, some of which may be of interest and value to civilian and military anesthetists alike.

With the exception of some of the topical and local infiltration anesthetics, the regional techniques were performed by student officer anesthetists and/or the Section Chief. Premedication was greater, as a rule, in comparison to civilian patients, and was administered to all patients. Those on whom regional anesthesia was performed for surgery received 0.015 Gm. of morphine sulfate and 0.0006 Gm. of scopolamine about one hour and 0.1–0.3 Gm. of nembutal thirty minutes before the block. Patients on whom a diagnostic or therapeutic block procedure was carried out were given only the barbiturate. All procedures were performed with the usual surgical aseptic precautions. The following agents were employed, depending upon the choice of the anesthetist and type and purpose of regional anesthesia: 4 per cent cocaine hydrochloride or 1–4 per cent pontocaine hydrochloride for topical anesthesia, 1 per cent procaine hydrochloride for local infiltration and field block with neosynephrine, 2 per cent procaine hydrochloride for nerve, epidural, and sympathetic ganglion blocks, 5 per cent procaine hydrochloride for continuous spinal anesthesia, and 10 per cent procaine hydrochloride, 10 per cent metycaine, 1 per cent pontocaine hydrochloride, and nupercaine in 1:1,500 solution for the classic subdural spinal anesthetics. Dosages were determined by the same criteria as employed for civilian patients. An interval of five to thirty minutes, depending upon the type of regional anesthesia, was allowed before the success of the procedure was evaluated.

Specially constructed syringes and needles are always desirable for the techniques of regional anesthesia. While such items are, at present, non-standard, one set was available for our staff. However, experience and the necessities of military expediency have proved that successful regional anesthesia can be performed with standard equipment issued to all surgical installations. This has been not only our finding but also that in many other hospitals here and abroad.

The total number of regional anesthetics performed has been summarized conveniently in Table 1. It can readily be seen that a wide

TABLE 1—REGIONAL ANESTHESIA TECHNIQUES EMPLOYED AT TILTON GENERAL HOSPITAL

Type of Topical application	Area or Nerves Anesthetized	Number of Blocks	
		Total	Operative
Local infiltration	Mucous surface of eyes nose mouth larynx urethra anus Scalp nose face neck thorax abdomen back groin extremities	462 1 238	462 1 219
Field block	Neck abdomen	11	11
Nerve block	Nerves Maxillary mandibular lingual radial median ulnar digital	35	34
Subdural (spinal) block	Midline spinal approach modified Taylor technique continuous spinal	685	683
Epidural	Thoracic and lumbar zonal anesthesia Caudal and/or transsacral block Continuous caudal	67	50
Sympathetic ganglion block	Stellate ganglion Lumbar sympathetic ganglion	69	69
Totals		2 625	2 464

variety of techniques have been employed, all of which are established and well-known procedures and commonly employed in university and other civilian hospitals throughout the country. About 94 per cent consisted of operative anesthesia and the remainder of diagnostic and therapeutic techniques. The incidence of success varied not only with the type of regional anesthesia performed and its specific technique, but also with errors in properly selecting patients mentally adapted for such procedures, misjudgment as to the duration of surgery, and the technical ability of the anesthetist. Successful techniques were obtained in approximately 85 per cent of the operative cases (45-100 per cent) and about 60 per cent (35-80 per cent) of the diagnostic and therapeutic procedures. Inhalation or intravenous anesthesia was administered in instances in which operative blocks failed or wore off.

Complications of major and minor character have occurred, none of which were fatal or refractive to treatment. No sequelae, infections, or gangrene were noted after any regional anesthesia. The major complications consisted of the following: two moderate and two severe toxic reactions to 4 per cent pontocaine applied topically in preparation for bronchoscopy, one severe toxic reaction to 1.5 per cent meprocaine given for our first continuous caudal anesthesia, one foot-drop following a sciatic nerve block for sciatica which was successfully treated by physiotherapy, 11 cases of various degrees of atelectasis, and 2 cases of bronchopneumonia after a single injection and continuous spinal anesthesia for nephrectomies and upper abdominal surgery. In all instances, the complications were not due to the agent per se or to the choice of procedure, but chiefly to poor technique or to inadequate post-operative care, as in the case of atelectasis.

Minor complications were no more frequent than those noted in civilian patients and consisted chiefly of variable degrees of vascular and respiratory depression, nausea and emesis during high level spinal anesthesia, headache, mild to moderate, urinary retention, and, infrequently, a backache after spinal anesthesia, and transient vertigo, nausea, and emesis in three instances after paravertebral block procedures.

### Diagnostic and Therapeutic Block Procedures

Of particular interest have been the type and number of diagnostic and therapeutic procedures performed at Tilton General Hospital. They have also been instructive and often a challenge. Above all, they have served significantly in developing keen cooperation among our internists, surgeons, and anesthetists in our common and academic approach to the problems of our patients. Thirty-two diagnostic procedures were performed. These procedures, with the indications, are listed in Table 2.

Many of these techniques were subsequently repeated as therapeutic procedures, while surgery followed in a few instances (see Table 2). The most interesting findings were noted in the first group of patients, most of whom were neurosurgical casualties, the rest being orthopaedic patients. The incidence of success with stellate and thoracic or lumbar sympathetic blocks in this group was high (80 per cent) and very gratifying to both patient and surgeon. Relaxation of the blood vessels with the resulting improved circulation practically always eliminated pain of vasospastic origin, if the pain persisted after the blocks were successfully accomplished, it was concluded that the pain was of somatic origin. The

number of diagnostic procedures performed in Groups 2 through 5 is too small to justify any comment. However, it may be stated that the technics employed in Groups 2 and 5 were all diagnostically successful. The most discouraging results were obtained in attempting to determine somatic versus visceral pain (Group 3) and the intervertebral disk versus the peripheral nerve origin of sciatic pain (Group 4).

Therapeutic block procedures were performed in cases not requiring a diagnostic approach and in all instances where the diagnostic technics were initially successful and where surgery was contraindicated or not contemplated. A series of 129 procedures were done which consisted essentially of lumbar sympathetic ganglion blocks, stellate ganglion blocks, paravertebral (spinal nerve) blocks, and others, as noted in Table 3. With the exception of 14 patients, it was found necessary to repeat the blocks two to eight times to obtain alleviation of symptoms for several months. While the initial paravertebral spinal nerve block, stellate ganglion, or thoracolumbar sympathetic ganglion block was effective for from several hours to two days, each subsequent procedure prolonged the effect in a geometric ratio extending into days, weeks, or months. Absolute or 95 per cent alcohol following the procaine injection was never used. The onset of relief was rapid (five to twenty minutes) in most instances, and often dramatic. The indications and type of therapeutic block employed are listed in Table 3.

The number and variety of indications for therapeutic regional anesthesia have been numerous. As with the diagnostic procedures, a high average incidence of success of 60 per cent (35-80 per cent) was obtained. Somatic pain was more difficult to treat, especially when referred from the viscera or when it originated in metastatic carcinoma. No ammonium preparations were available for the latter. Of particular value were the procedures performed for pain, cyanosis, edema, and coldness of the extremities due to vasospastic disturbances. Occasionally the results were dramatic and spared the patient a sympathectomy. These effects were determined subjectively by the patient and also objectively by noting changes in color, skin temperature, and increases in circulation time of the extremities (determined by the Section on Cardiovascular Renal Diseases). In seven instances there was a significant, measured decrease in the circumference of the calf and ankle regions in cases of chronic edema due to prolonged vasospasm.

## Discussion

Regional anesthesia is now an accepted procedure in military surgical installations as well as in

TABLE 2.—INDICATIONS FOR DIAGNOSTIC PROCEDURES EMPLOYED

Group	Indications	Technic Employed	Number
1	Determination of: Somatic vs. sympathetic (vasospastic) pain	Stellate or lumbar sympathetic block	16
2	Value of proposed sympathectomy for extremities	Stellate or lumbar sympathetic block	5
3	Parietal vs. visceral pain	Differential paravertebral block, zonal epidural anesthesia, or local infiltration	5
4	Intervertebral disk vs. peripheral nerve origin of sciatic pain	Paravertebral block or sciatic nerve block	4
5	Lower extremity pain in suspected malignancy	Spinal anesthesia	2
Total			32

civilian hospitals. Its practice in medical organizations overseas emphasizes its growing popularity and suitability for military casualties at field units. All types of regional anesthesia in numbered installations and at Tilton General Hospital, with the exception of cryoanesthesia, have been employed. The specific technics used have been the established procedures of Labat,<sup>23</sup> Rovenshteyn,<sup>24,25</sup> Tovell,<sup>4</sup> Lundy,<sup>9</sup> Lemmon,<sup>26</sup> and others. Sympathetic ganglion blocks employed were similar to those described by White,<sup>27</sup> DeBakey and Ochsner,<sup>28</sup> and Nicholson.<sup>29</sup> New methods have not been devised, except for the modification of the Taylor technic.<sup>30</sup>

The total number of regional anesthetics performed at Tilton General Hospital is too small to justify a statistical analysis or a comprehensive evaluation of the various procedures employed. However, from the data presented, certain interesting facts may be noted. The variety of procedures used, their indications, and the incidence of success compares favorably with results obtained at civilian institutions. Complications were just as varied and perhaps as severe as at civilian hospitals. It is gratifying to know that despite a continuous stream of students<sup>31</sup> assigned to the school of anesthesia at this post, who helped perform some of the regional anesthetics, no fatalities or sequelae occurred.

The number of sympathetic ganglion blocks performed was high. This is undoubtedly due to the increased incidence in this war of injuries of the extremities and their peripheral nerves as well as to the presence of a neurosurgical center at Tilton General Hospital. In performing therapeutic ganglion blocks no alcohol was employed, not only to avoid local neurolysis, which would make subsequent surgery more difficult, but also because often one or two procaine procedures would produce lasting results. No anesthetic

Group	Indications	Procedures	Number
A	Somatic pain due to 1 Fractured bones—face, rib extremities	Maxillary, mandibular radial median, and ulnar nerve blocks, brachial plexus block paravertebral block or local infil	18
	2 " " " " " "	" " " " " "	8
	3 " " " " " "	" " " " " "	6
	4 " " " " " "	" " " " " "	7
	5 " " " " " "	" " " " " "	14
	pains of neuromata origin)		
	6 Metastatic carcinoma—ribs, pelvis	Paravertebral block	4
	7 Neuralgia paresthetica	Local infiltration or paravertebral blocks	3
	8 Combination of factors	as noted above	21
B	" " " " " " to		
	" " " " " " nerve injuries	Lumbar sympathetic ganglion block	6
	" " " " " " muscle injuries	Stellate ganglion block or lumbar sympa- thetic ganglion block	42
	4 Unknown causes		
C	Other " " " " " " with or without symptoms treated	Stellate ganglion block or lumbar sympa- thetic ganglion block	
	1 " " " " " "		
	2 " " " " " "		
	3 " " " " " "		
	Total		129

[illegible]

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## Discussion

Dr. Arthur M. Suffin, M.D., *Hempstead, New York*—I was particularly interested in Major Martin's report on diagnostic and therapeutic nerve blocks for vascular diseases of the lower extremities. Ochsner and DeBakey reintroduced in 1939 and, what was more important, gained wide recognition in pointing out the value of lumbar sympathetic block for thrombophlebitis. This block is directed solely at the abolition of vasomotor influences to the lower extremity. The elimination of the reflex spasm improves arterial circulation and venous return which in turn aids lymph drainage, thus reducing the edema and improving the color and lessening the coldness. Frequently, this block is followed by a marked diminution or elimination of pain. This is merely a happy coincidence. The mechanism of this pain relief is interesting and as yet unsettled. The great weight of experimental evidence is against the conception that pain impulses from the periphery traverse the sympathetic ganglia on their way to the cord and cortical centers. Evidence indicates that all pain impulses from the extremities reach the cord by way of the posterior root system without passing through the sympathetic chain. We therefore cannot accept an explanation which supposes that the lumbar sympathetic block has resulted in a physiologic lesion of centripetal pain fibers. Moreover, we know from many clinical cases that surgical sympathectomy leaves sensation in the normal unaltered. Antidromic conduction in efferent sympathetic fibers

has been postulated. This has not been generally accepted. We are left, therefore, with the currently accepted theory of vasospasm as the origin of the pain with the posterior root system relaying it to the brain. Whether one believes in the ischemic theory or the tension theory of muscle pain is immaterial, since both mechanisms operate in thrombophlebitis. The blocking of the centrifugal vasomotor influences supposedly releases the arterial spasm, breaks up the vicious cycle, and restores normal circulation. It is quite conceivable that the deposition of a sufficient quantity of anesthetic solution paravertebrally in relation to the sympathetic ganglia and rami communicantes may easily diffuse posteriorly to anesthetize the somatic trunks carrying pain fibers from the lower extremity.

As regards diagnostic procedures for peripheral vascular disturbances, I believe that a median block at the wrist or an ulnar block at the elbow for the upper extremity, and an anterior or posterior tibial block for the lower extremity, are more efficacious for differentiating organic narrowing or occlusion of peripheral vessels from vasospastic narrowing. So frequently, after what appears to be a successful stellate ganglion or lumbar sympathetic block, there will be demonstrated a further rise in skin temperature over the anesthetized region following a more peripheral interruption of vasomotor fibers. This is more practical and gives more consistent and reliable results.

That vasospasm plays an important role in causal-gic states is exemplified as Dr. Martin has indicated by the more gratifying results following sympathetic block in those patients presenting an extremity that is cold, painful, with hyperidrosis usually, and color changes.

Finally, any radical sympathetic, posterior root, or cord surgery for painful amputation stumps should be preceded preferably with a spinal anesthesia to the appropriate level. If the pain is not relieved, surgery is useless and a good deal of time and suffering will have been saved.

## MEDICAL TRIUMPH

Dr. William H. Ross, chairman of the board of trustees of the Medical Society of the State of New York, meeting at the Hotel Pennsylvania, advanced yesterday [May 9] toward the retiring president, Dr. Thomas A. McGoldrick, to award him a gold medal.

The applause was so vigorous that a large screen behind the speakers' dais teetered and fell toward Drs. Ross and McGoldrick. Two other physicians and a rear admiral grabbed the screen and held it as a canopy over the heads of the principals as they went through the ceremony. Not a twitch showed in Dr. McGoldrick's buccinator muscle, nor was there a quiver in Dr. Ross's oculomotor nerve, a superb example of perfect control.—*New York Herald Tribune, May 10, 1944*

## WAR AGAINST DISEASE

The prevention of disease and the prevention of war are today the two great world problems. The way is pretty plain in this matter of war, be it against a pathogenic microbe or against a pathologic nation of people. As we have organized preventive medicine, we must organize preventive war. In medicine we do not talk about peace with the disease, with the parasites, with the tubercle bacillus, for example. We do not propose to write a peace treaty with these causes of disease. We do not sit around a peace table with our disease-producing enemies. We wage continuously either an active or preventive war. We should have a continuous preventive war program fashioned along the lines of our continuous preventive disease program.—*David John Davis, M.D., Diplomat, Jan., 1944*

# OBSERVATION OF ANORECTAL DISEASE AND PILONIDAL CYSTS IN AN ARMY HOSPITAL

J E ALFORD, Capt., (MC), AUS, Fort Jay, New York

THIS paper is based upon observations made in a station hospital within the continental United States which accepts and treats officer and enlisted personnel on duty within the area serviced by it, or casual personnel on furlough within this area. This hospital does not receive battle casualties from overseas, therefore, the patients treated by us are very similar to those seen in civilian hospitals except for two notable exceptions. They are all men and fall within a fairly narrow age group and are leading a more active life than they were formerly accustomed to. Army life is much better regulated as to dietary and sanitary habits, and, while they work harder, their environment is much better.

It is interesting to note that in the year 1943 the cases falling within the interest of a proctologist that were admitted on the surgical service constituted 11 per cent of all the admissions. These included hemorrhoids, 51 per cent, pilonidal cysts, 27 per cent, perirectal abscess, 7 per cent, fistula in ano, 6 per cent, and other diseases, 9 per cent.

Although pilonidal cyst is anatomically not a proctologic disorder, it has been customarily studied and treated by proctologists in many parts of this country and abroad and is usually included in textbooks on proctologic disease. A pilonidal abscess is frequently mistaken for a perianal abscess and for that reason is often referred for proctologic care.

## Pilonidal Cyst

Probably the lesion that is of most interest to the military surgeon is the sacrococcygeal or pilonidal cyst. It is interesting for two reasons. First, the military surgeon is struck with the large number of cases he sees in the army in comparison to civilian life, and, second, by the prolonged hospitalization which many of the patients require before being able to return to duty status.

It was observed by Bacon<sup>1</sup> in a series of 268 cases of pilonidal cyst that 93 per cent of the cases were found in persons between 16 and 40 years of age and that 62 per cent of the patients were between 21 and 30. Of all his cases 66 per cent were in the male. All of our cases fall in the high percentage age group and they are all men.

It has been shown<sup>2</sup> from histologic studies of

human embryos that a pilonidal cyst is derived from skin ectoderm by a process of ectodermal invagination in the third and fourth months of embryonic life, in cells which are destined to form hair and glands. This method of origin, plus the analogy drawn between the preen gland in birds and the pilonidal sinus, suggests that the sinus represents a vestigial skin appendage developing at puberty, therefore, the age distribution is at, or slightly later than this period.

Hair protruding from the sinus opening is commonly seen, as is a collection of skin detritus and sebaceous material. This makes an excellent culture medium for organisms to grow upon, and if we add to this surrounding tissue which is devitalized by trauma we have the stage set for an infected pilonidal cyst, or a pilonidal abscess.

The soldier in his everyday life is subject to trauma in this area much more commonly than he would be in civilian life, particularly since the advent of mechanized warfare. Probably the worst offender among mechanized equipment is the jeep. Buie recently read a paper on pilonidal cyst before the Southern Medical Association in which he referred to it as "jeep disease."

The surgical treatment of pilonidal cyst is still controversial, opinion is divided whether to close the wound primarily, pick it open, or do a partial closure plus packing. We will not go into a discussion of the pros and cons of any one type of treatment, as we have not studied a sufficiently large series of cases done by any one method to draw any conclusions. It should be stressed, however, as has been repeatedly cited by the adherents of primary closure, that the success of this type of treatment is directly dependent upon basic surgical principles, namely, accurate hemostasis, complete obliteration of dead space, and mobilization of tissue sufficient to prevent tension on sutures. If these conditions are met it is our feeling that many more of these cases can be dealt with in this manner successfully and the patient's hospital days reduced materially. As army surgeons we are anxious to return the patient to duty as quickly as possible without endangering his health and in such physical condition that he is able to perform his regular job.

Waldenberg and Sharpe<sup>3</sup> studied 100 consecutive cases of pilonidal cyst admitted to an army hospital and treated them all by excision and primary closure. Ten per cent of their patients had had previous excision and 38 per cent had had previous incision and drainage per-

formed. In addition to meeting the basic surgical principles previously suggested, they outline a program of preoperative treatment focused upon elimination of as much inflammatory reaction as possible, plus rigid postoperative management with special emphasis upon local and systemic use of sulfonamides. They stress, in this postoperative period, the fact that frequent dressings invite local infection and there must be a good indication, such as temperature elevation, or local pain out of proportion to the usual incisional discomfort, before the original dressing is disturbed in the first week following surgery.

Their patients have had healed wounds in an average of twenty-one and a half days and are returned to full military duty in an average of twenty-eight days. The incidence of wound infection with breakdown is low in their series.

In using sulfonamides Scott<sup>4</sup> adds the suggestion that the buffered crystalline sulfanilamide containing 10 per cent calcium carbonate will further cut down the percentage of postoperative wound infections. He presents evidence that the anion of the sulfonamides is the agent that is directly responsible for the antibacterial effectiveness of the drug and the difference between the various sulfonamides is based directly upon their acidic dissociation and, indirectly, upon the pH of the wound.

Primary closure may not seem warranted because of the size of the cyst, the presence of multiple side tracts, where a considerable block of tissue will have to be excised, or the presence of considerable infection. The procedure of choice, then, is block excision with undermining of the skin edges to increase the mobility and the use of the method that obliterates dead space and more closely approximates skin edges without a true primary closure, namely, suturing the skin edges to the sacrococcygeal fascia, with interrupted silk sutures as used by MacFee<sup>5</sup> in 230 cases with a very high percentage of cures. The length of hospitalization was not stressed in this series but in our hands it seems to compare favorably with cases of primary closure.

We feel that a lower percentage of recurrences will be seen if each case is carefully evaluated, if considerable attention is paid to preoperative preparation, and the operative procedure is selected to fit the individual indication.

## Hemorrhoids

The most common pure proctologic disorder treated in our hospital is hemorrhoids. We choose to discuss it second only since this type of case does not require as long a hospital stay as the case of pilonidal cyst. It is an important entity for the consideration of the military surgeon because next to infections and fractures of

the extremities this entity accounted for the largest number of admissions to our surgical service of any one lesion in the period previously mentioned.

Smith<sup>6</sup> found in a large series of cases that the sex incidence of hemorrhoids is 2 to 1 in favor of men and that most cases are in the age group of 20-60, with those in the period between 20-40 predominating. Again our cases fall well within these two groups.

The cause of hemorrhoids has been an often debated subject, but as a predisposing cause Montague<sup>7</sup> has shown there is a structural weakness of vascular tissues which is inherited. Forty per cent of our cases gave a family history of hemorrhoids in the same or the preceding generation and the vast majority of these individuals gave a history dating their rectal complaints prior to their entrance into the army. From this we deduce that the increased activity in service did not contribute to the formation of hemorrhoids.

Constipation as a cause of hemorrhoids was practically absent in our cases. Most patients have reported a marked improvement in bowel habits since induction and it is thought, with the improvement in the physical condition of the man plus the rigid adherence to a regulated way of living, that the bowel function and bowel habit had greatly improved.

Probably the greatest single exciting cause of hemorrhoids is inflammation in and around the anorectal line as has been so well described by Buie.<sup>8</sup> He has shown that the first step is a cryptitis due to some type of trauma to the anal crypts with an extension of the inflammatory process to the adjacent structures and invasion of the venous wall with the formation of a typical phlebitis. The pathologic process within the vein wall leads to dilation and a varicosity develops with replacement of the elastic layer by fibrous tissue.

Hill demonstrated, by a remarkable study of hundreds of sections of the anorectal region, the presence of many perianal tubules opening into the crypts of Morgagni, and it is reasonable to assume that infection in the crypt will follow rapidly into these tubules and set up thrombosis in the already congested veins. The continued trauma of daily bowel movements is sufficient to lead to a vicious cycle.

It may be argued that the hemorrhoids come first, and the infection is secondary to stasis. If this is true, it is probably seen only in patients with a definite hereditary history. Even in these cases infection may cause an early breakdown of the hereditarily weak venous structures.

Other factors, such as the absence of valves in the superior hemorrhoidal vein with the hydro-

static pressure exerted by the column of blood from the heart down, increased intra-abdominal pressure from constant straining at stool, heavy lifting, or chronic coughing, or impaired portal circulation from hepatic cirrhosis or cardiac decompensation must be considered in discussing the cause of hemorrhoids, but only a small percentage of cases fall into this group in large series of cases studied in civilian life, and we have found no such cases in this series.

The majority of our cases were of the combined external and internal type of hemorrhoids. We have not included any of the cases of the thrombotic external variety, as they were all treated as outpatients and did not require hospitalization. They were treated with excision of the clot and suture of the skin edges with resulting primary union without suppuration in all cases.

It has been rare in our experience to see simple internal hemorrhoids in the army which could be treated as ambulatory cases by the injection method. Whether the soldier does not report on sick call until he develops a more alarming rectal symptom than occasional bleeding at stool or not we do not know, but that has been our supposition, in view of the large percentage of cases that we see that have to be treated surgically.

We believe that the treatment of external-internal hemorrhoids is surgical excision and that the technic varies with the individual case. Because of the frequent occurrence of associated lesions, such as infected crypts, hypertrophied papillae, fissures, fistulas, etc., no one technic is applicable to every case. The majority of our cases were not associated with much prolapse of the rectal mucosa because they occurred in the younger age group and were treated by the ligation and dissection method with transfixion of the pedicle to the fibers of the external sphincter ani muscle as described by Swinton.<sup>9</sup> These patients were hospitalized for ten days, after which they were returned to duty. After the first twenty-four hour postoperative period they were treated as ambulatory patients. The patients with severe prolapse were considered to be best adapted to the plastic amputative type of hemorrhoidectomy advocated by Buie. The period of hospitalization for this type of case was slightly longer, but they were routinely returned to a duty status at the end of fourteen days.

All of the patients who were on duty in the immediate vicinity were seen at weekly intervals for a period of four to six weeks after being discharged from the hospital so that gentle dilation could be performed to prevent postoperative bridging with infection and stricture formation. Those who were itinerant were instructed to report to the medical officer in charge of their

outfit for such treatment. We firmly believe that this postoperative observation is essential to obtain good end-results and prevent complications following hemorrhoidectomy.

### Abscess and Fistula

Anorectal abscess and fistula, which are different stages of the same inflammatory process which takes its origin at the anorectal junction, will be discussed together.

It is commonly thought that the abscess originates from an infected crypt with an extension of the inflammatory reaction through the perianal tubules to the ischioanal or supralelevator spaces. We have seen many cases of cryptitis associated with hemorrhoids, but the fact that our patients had no general debility and possibly were able to keep the infection well localized, may account for the lower incidence of abscess and fistula formation.

We have seen no case of abscess or fistula secondary to rectal involvement by lymphopathia venerea.

Our cases of abscess were all drained as soon as they were seen and the fistulas were excised after the inflammatory reaction had completely subsided. In most cases the soldiers were discharged to duty for a period of six weeks to two months before the fistulectomy was performed. It was found that if they were seen at weekly intervals to prevent the abscess' reforming the tract was well defined and easily excised at the end of this period with a minimum amount of tissue sacrificed.

### Proctocolitis

During the twelve months covered by this study we have been fortunate in being able to examine a large number of civilian applicants for induction into the armed forces from a very large induction center, who gave a history of colitis. These patients were all subjected to a proctosigmoidoscopic examination and it has been extremely interesting to note that a very small percentage of the patients presented any pathology in the bowel wall indicative of an inflammatory or an ulcerative process. Those patients in whom there were no evidences of inflammation or signs of pathology above the reach of the sigmoidoscope must fall in the groups of so-called spastic colitis, mucous colitis, or irritable colon.

The history was always the same and was that of intermittent attacks of frequent bowel movements, usually four to seven daily, associated with abdominal cramps, lasting for varying lengths of time and usually connected with some emotional strain of varying intensity. There was seldom a history of rectal bleeding associated.

While we do not know definitely how many



of these patients were inducted into the Army, since we saw them only in consultation, we assume that a large proportion of them became soldiers.

During this period we have had only four cases of colitis in 2,500 admissions. Two of these were cases of chronic nonspecific ulcerative colitis and two were the result of old cases of amebic dysentery with negative stool cultures but permanent changes in the bowel wall.

It is interesting to speculate what has become of that group who entered the army with the complaints of diarrhea. Either the complaints were never really severe enough to incapacitate them, or the change of habits and environment, with plenty of fresh air, sunshine, and a well-balanced diet, as suggested by Hurst,<sup>10</sup> have alleviated their symptoms.

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### Discussion

Dr. Descum C. McKenney, *Buffalo*—It would seem that the theory that pilonidal sinuses and cysts are due to embryonic invagination of the ectoderm has the largest number of followers, as sections made of them would indicate.

This war has brought together thousands and thousands of our young men, whose duties are strenuous and tend, through injury, to cause infection in these congenital deformities.

From camps scattered all over the United States these diseased individuals in sizable groups are sent to hospitals for treatment and this segregation of this particular disease has provided exceptional opportunity for mass study as to treatment such as has never occurred in private practice and from which, in consequence, the disease is now practically removed.

Previous to our military mobilization the treatment which was most generally accepted and was quite satisfactory so far as end results were concerned was excision and healing by granulation. Except for the first few days of convalescence it did not, in most cases, prevent the individual from carrying on his usual occupation while the wound was healing.

In the military service, however, the wound must be healed, I understand, before the patient is returned to full duty, which created an immediate demand for quick and solid healing to save man-hours; hence, with this object in view, everywhere efforts were at once directed toward improvement of the immediate suture technic. Much has been accomplished and, from the great number of papers that have appeared in the past two years, one gleams the following valuable points, to mention only a few, as practiced by different surgeons in often only slightly modified form:

1. Preoperative elimination of active infection.
2. Meticulous block excision of the diseased tissue without spilling into the wound infection therefrom.
3. Perfect hemostasis.
4. Elimination of all dead space in wound closure by

(a) Undermining wound edges to permit their accurate approximation without tension and then suturing them down to the fascia, with closure of the more superficial part of the wound with vertical mattress sutures.

(b) By the formation from nearby tissues of a central ridge over which the wound edges can be brought together without tension.

Another method, a partial closure technic, attaches the skin edges to the fascia but leaves an exposed vertical midline cleft between to heal by granulation.

Captain Alford, with his experience as a proctologist, recognizes the fact that external hemorrhoids are practically always associated with internal hemorrhoids as well as many other lesions such as fissures, chronic cryptitis, and papillitis, etc.; that the treatment is surgical; and that, for success, all the lesions present must be dealt with at the same operation.

In the surgical treatment of fistulas, failures, such as recurrence and incontinence, are frequently due to attempts at treatment while they are in the abscess stage. As the author has indicated, it is safer to be sure that the offspring of an abscess is really a fistula before treating it as such.

### ASSOCIATION OF MEDICAL COLLEGES TO MEET

The fifty-fifth annual meeting of the Association of the American Medical Colleges will be held in Detroit, Michigan, October 23, 24, and 25, 1944.

Headquarters will be in the Hotel Statler, and the host will be the Wayne University College of Medicine.

# TWO-SCORE YEARS OF PEDIATRICS

## A History of the Pediatric Section

T. WOOD CLARKE, M D, Utica, New York

TWO score years ago pediatrics as a specialty was in its infancy. It is doubtful, if, at the turn of the century, there were a dozen physicians in America devoting themselves exclusively to the care of children. Few medical schools had a teacher of pediatrics and the schools that did made him subservient to the department of internal medicine. If hospitals had children's wards they usually held a few orthopedic cases and little else. The attitude of the public was that if an adult were ill a good doctor must be called, if the children were sick anybody would do for them. A few ambitious young physicians crossed the ocean to learn something about infant and child care in the great children's hospitals of London, Berlin, Vienna, or Paris. The rest got their pediatric education largely from the agents of the proprietary infant-food companies.

Diphtheria, though the mortality rate had been reduced by Behring's discovery of antitoxin, was still the most dreaded of the contagious diseases, tuberculous adenitis, arthritis meningitis, and peritonitis were common diseases, while cases of congenital syphilis, scurvy, and rickets were seen every day.

Cholera infantum, which raised the infant death rate in the summer months to anywhere between 250 and 500 deaths per thousand births, ran the physicians ragged during the months of July, August, and September, and enriched the undertakers, was considered to be an uncontrollable act of the Almighty. We did not then know that it was simply dirty milk poisoning.

Those whose memories go back to the last decades of the nineteenth century can call to mind pictures which would indeed astonish the younger generation of today. There is the filthy, dark cow-barn, the cows plastered with manure and wallowing to their knees in much the farmer with foul hands milking into rusty or dirty pails, the warm milk standing for hours exposed to the sun, the open containers the roosting place of barnyard fowls, with the steady procession of flies buzzing blithely from the nearby privy to the open milk cans. We see the slow trip to the city, the cans rattling noisily as the milk-cart labors through mud to the hubs, and the driver getting out to lift the wheels bodily out of the mudholes. Bespattered and dirty, the cart

and driver arrive in the city. In the same dirty condition he ladles the warm, well mixed milk into his pail, and with a cheerful face and happy song swings up the alley and, fishing the much used and grimy tickets out of the flat milk pan on the back porch, measures out his two quarts and a pint and leaves it open to absorb the rays of the rising sun and wait at the housewife, three hours later, to the great delight of the neighborhood dogs and cats.

Those were the days when milk had to be delivered twice a day in summer, as the morning's milk was always sour by supper time, and if there were a thunderstorm in the morning, it was sour by noon. If the milk had a fair cream content and a good rich cowy odor we were satisfied. We did not know that the cowy odor we so admired was the stench of the manure which the milk contained. The only examination made by the milk inspectors was to take the specific gravity and estimate the cream content to see that it was not watered or skimmed. When bacterial counts were first introduced it was found that the germ content of most of our milk was far higher than that of our sewage. The only measure taken to prevent cholera infantum in the hot weather was to swathe the long suffering infant's abdomen in many layers of wool—the hotter the weather, the more the wool and the unhappier the child.

Although the general medical and lay ignorance as to the cause of the intestinal diseases of children was abysmal, a few voices were heard crying in the wilderness. In 1885 von Guens, of Amsterdam, made the first bacterial count of milk, while the next year pasteurization was born when Soxhlet stated that if milk were heated to 60 C it was less harmful to infants. In 1888 Dr. Augustus Caille, in a paper read before the New York Academy of Medicine, recommended that all milk fed to babies be sterilized. In 1889 Dr. Henry Koplik opened the first dispensary for sterilized milk in New York. In 1892 Budin, in Paris, introduced consultations for infants and Dr. Henry L. Coit, of Newark, became the father of certified milk.

In 1893 Mr. Nathan Straus, of New York City, began his crusade which, during the next quarter of a century, did more for the safeguarding of babies against contaminated milk than any other single factor. In that year, under the advice of Drs. Abraham Jacobi and Roland Freeman,

he opened his famous pasteurized milk stations in New York, one year before Dufour inaugurated his "Goutte de Lait" in Paris. The Straus milk depots demonstrated conclusively that babies who were fed pasteurized milk remained healthy during the summer while those who did not patronize the depots had as much intestinal disease as before. For two score years Straus appealed to the governments of cities, states, and nations, inveighing against the sale of dirty milk and demanding universal pasteurization. His first great victory came after fifteen years of untiring effort when Chicago, in 1907, passed a law requiring the pasteurization of all milk from herds which had not been tuberculin-tested. Five years later New York City required all milk sold in the city, except certified milk, to be pasteurized. Straus not only advocated the municipal pasteurization of milk but presented pasteurizing plants to cities in both America and Europe where the authorities were willing to adopt his ideas but could not afford the equipment. With the spread of municipal pasteurization summer diarrhea in infants faded from the picture. The younger members of the profession have no conception of the once-dreaded cholera infantum.

From 1900 on New York City took an ever increasing interest in the welfare of infants, an interest which led to the organization of the New York Milk Committee in 1906 with its many infant welfare stations and the formation, in 1908, of the Division of Child Hygiene of the Department of Health under the able direction of Dr. S. Josephine Baker.

So startling was the improvement in the health of New York City's infant population under the stimulus of the reforms introduced by Dr. Baker that the movement spread like wildfire through the State and the nation. By 1912, under the stimulation of the enthusiasm of Dr. Goler, Health Officer of Rochester, and Dr. Henry L. K. Shaw, of Albany, Consultant in Child Hygiene of the New York State Department of Health, the interest of the upstate cities was aroused. In that year the Baby Welfare Committee of Utica was organized with one milk station and one nurse for two months in the summer. From these small beginnings have grown the elaborate system of welfare stations which now, either under private or public auspices, care for the infants and educate the mothers in every city in the country.

This awakening of the lay mind to the need of more adequate methods for the care of infants and children which occurred during the first two decades of this century was due partly to the increased social-mindedness of the nation at large, but probably more to the rapid growth of pediatrics as a specialty. The number of men de-

voting their time largely or exclusively to child care increased rapidly. The American Pediatric Society was formed; local and state organizations appeared all across the country, enthusiastically emphasizing the importance of pediatrics as a specialty. The education of the medical profession pediatrically had begun. In 1913 the Medical Society of the State of New York first recognized pediatrics as a specialty.

For over one hundred years the State Society had been holding its annual meetings. As, during most of its life, every physician was a general practitioner, each member of the Society was interested in all papers read and all sessions of the Society were attended by the entire membership. By 1911 the number wishing to read papers had increased to such an extent that in that year the sessions were held for two days, morning, afternoon, and evening, at which forty-four papers were read. By the end of the meeting we were all exhausted and the specialists who had been obliged to listen to forty-four papers in order to hear one or two on the subjects in which they were interested were thoroughly bored. The result was that the next year, 1912, under the administration of Dr. Wendell Phillips, the first steps were taken toward the modernization of the State Society. Besides the general sessions there were five special sections, each of which held four meetings. In the section on medicine thirty-seven papers were read; in that on surgery, thirty; in mental and nervous diseases, twenty-six; in public health, thirty-three; and in eye, ear, nose, and throat, twenty-nine—or one hundred and fifty-five papers in all. Each section produced nearly as many papers as the entire society had done the year before.

At this meeting at Albany in 1912 a notice was posted inviting all men interested in pediatrics to a luncheon. At this time, under the leadership of Dr. Henry L. K. Shaw, a resolution was passed petitioning the State Society for a section on pediatrics. The petition was acted upon favorably and, in 1913, the section on pediatrics came into being, with Dr. Shaw as chairman and Dr. Thomas S. Southworth as secretary. As the section was only provisional and its continuance was dependent upon the success of this first meeting, the officers exerted themselves to the utmost to collect a galaxy of pediatric talent on the program. In all, there were twenty-three papers. Dr. L. Emmett Holt spoke on the then comparatively new procedure of the Wassermann test in its relation to children. Dr. Kerr spoke on hemorrhagic diseases, Dr. Mercer on recurrent vomiting, Dr. Sherman on goat's milk feeding, Dr. Snow on x-ray diagnosis of intussusception, Dr. Pisek on the general subject of infant-feeding, Dr. Van Ingen on infant mortality,

Dr Vander Bogart on enuresis Dr Wynkoop gave a plea for the more frequent use of lumbar puncture, then a procedure rarely used by the general practitioner Dr Leo-Wolf spoke on the care of the newborn, Dr Frost on nursing, and the present writer gave his ideas on the training of sick children Of the twenty-three men who presented papers at this meeting I believe that Drs Wynkoop, Roby, Kerr, Van Ingen and I are the only ones now living

Dr Pisek, in his paper, drew a picture of the status of the infant feeding problem at that time which is worthy of quotation He said that during the past fifteen to twenty years there has been accumulating a mass of knowledge concerning infant feeding which has not been digested and assimilated by the medical profession as a whole Too often a new contribution to this subject has been hastily seized upon and made the basis of a so-called system of infant-feeding instead of being assigned to its relative position in the general scheme of infant-feeding

"At one time sterilization of milk to destroy all the bacteria was lauded as a solution of all infant-feeding troubles, then modified or humanized milk came along, followed by pasteurization Later came percentage modification, for which were offered tables by which infant feeding was to become a mathematical science, then milk and gruel mixtures, whey and cream mixture, malt soup, precipitated casein and maltose mixtures had their advocates Clean milk which contained so few bacteria that it need not be heated was put on the market, and the other extreme, the addition of millions of bacteria to each teaspoonful of milk for the infant's use, was advocated to make it suitable for digestion

"Babies have survived all these fashions and in spite of them the death rate has declined"

The members of the section that year and for a number of years afterwards were tendered an invitation to attend the Tri-city Pediatric Meetings held annually in Boston, New York, or Philadelphia Many of us took advantage of this each year and thus widened our knowledge of and acquaintance with the pediatricians of the neighboring states With the formation of the American Academy of Pediatrics and its sectional meetings these meetings were given up We also, in the early years of the section, held clinical days in the autumn when many of us went to New York City to attend special clinics arranged for us by our New York City members The older members of the section remember these two annual trips with great pleasure We recall especially the debts we owed to Drs Pisek and Dennett for the time and effort they expended in arranging the clinical days in New York City

The following year, 1914, when Dr Southworth was chairman, the number of sessions of the section was reduced from four to three and fifteen papers were read, more time being allowed for discussion The outstanding feature of this meeting was the address of Dr William H Park, describing his great new discovery of the value of toxin-antitoxin in the prevention of diphtheria, the procedure which, since that eventful day, has changed diphtheria from the most dreaded of all diseases of children to a medical curiosity Other prominent contributors to this meeting were Drs Holt, Freeman, Carr, and Keiley

In 1915 the chairman, Dr Joseph Roby, of Rochester, inaugurated the custom of having eminent pediatricians from outside of the state as our guests Dr John Lovette Morse, of Boston, gave a general discussion of digestive disturbances, and Dr John F Sinclair, of Philadelphia, introduced us to the use of the soybean as a milk substitute or diluent in infant feeding The custom was also started of making trips to places of interest in the neighborhood As the meeting was held in Buffalo, we visited the Franklin School, the Park School, and the Fresh Air School, something of an innovation at that time

When Dr Sherman, of Buffalo, served as chairman for the Saratoga meeting in 1916 an important symposium was held on the medical examination of school children, a branch of pediatrics which had been, up to that time, generally most inadequately carried out

When the society met in Utica in 1917, under the chairmanship of Dr Wynkoop, we were introduced to an entirely new branch of medicine which has grown with tremendous strides in the last quarter century, has been of intense interest to pediatricists, has developed a complete new specialty, and now has an American College for those who practice it When Dr Fritz Talbot, of Boston, read us his epoch-making paper entitled 'The Role of Idiosyncracies in Practice' he gave to us our first knowledge of allergy

On the last day of the meeting we visited the New York State School for the Feeble-Minded, in Rome, where Dr Bernstein and his staff and Dr Cornell of Albany demonstrated to us the various types of mental deficiency

At the 1918 meeting at Albany, at which I had the honor of presiding, we had a joint meeting with the section on obstetrics Dr Hirst, of Philadelphia, discussed birth injuries and Dr J P Crozier Griffiths of the same city spoke on the maintenance of breast-feeding The latter's plea for breast-feeding contained so many truths which seem to have been forgotten in these days of four-hour nursing and immediate supplemental

feeding that some quotations are of interest. He emphasized the fact that "nothing will so soon diminish the milk supply as the insufficient emptying of the breast and nothing, on the other hand, conduces so greatly to an increase in the secretion as the increase in the demands made upon it." Later he said that "the average normal infant empties his stomach in one and a half to two hours and is then ready for more." "The longer the interval, the less stimulation of the breast occurs and the greater the danger of the milk supply's diminishing." He assured the section that "even a little breast milk is much better than none, and this is particularly true in the first three months of life." At the present day, when the newborn baby is nursed every four hours or not at all, and his appetite is sated with a milk formula from the hour of birth, the mother who nurses her baby for more than two weeks has become rare enough to put in a museum.

On the last day of this meeting we adjourned to the Hudson Reformatory, where Dr. Lewellys Barker, of Baltimore, spoke on the nervous, spoiled child, and Dr. Healy on "The Cause and Prevention of Delinquency."

The Syracuse meeting of 1919, under the chairmanship of Dr. Vander Bogart, stressed, for the first time before the section, the child welfare movement then rapidly spreading across the country. Miss Julia Lathrop, director of the U. S. Children's Bureau, described the work of the organization and Drs. Hamil, of Philadelphia, Richard Smith, of Boston, and Shaw, of the New York State Department of Health, discussed the procedures in their localities.

When we met in New York City in 1920, under the chairmanship of Dr. Mercer, we were introduced to another epoch-making advance in medical knowledge, the vitamins. Dr. Hess, of New York City, discussed the antiscorbutic vitamins, Dr. Osborn, of New Haven, discussed the water-soluble vitamins, and Dr. Mendel, also of New Haven, spoke on the fat-soluble vitamins. These were all the vitamins known at that time. It is of interest, in view of the tremendous vogue today for swallowing vitamin pills for all conditions from dandruff to ingrowing toenails, to see what Dr. McCollum, of Johns Hopkins, the leading authority on vitamins, said at that time in his discussion of these papers. "I regard it as a step in the wrong direction to give the medical profession the idea that there may be expected marked therapeutic effects from commercial preparations of vitamins such as are now on the market from a number of sources."

In a joint session with the section on public health, Dr. Allen Kraus, of Baltimore, said that 10 per cent of the people who have tuberculosis

develop it in their first year, 30 per cent by the end of the third year, 60 per cent by the sixth year, and 75 per cent by the time they are 15. He believed the large percentage of childhood infections was due to children's playing on tuberculosis-infected sidewalks.

In the Brooklyn session in 1921, under Dr. Ludlum, the chief features were another joint session with the section on public health, an appeal by Dr. Haas against the puncturing of the ear drum, and pediatric clinics at the Brooklyn Hospital.

In 1922, in Albany, when Dr. La Fetra was chairman, we had a further discussion of toxin-antitoxin and the Schick test by Drs. Zingher and Park, a paper on status lymphaticus by Dr. Walter Timme, an appeal by Dr. Haynes that pediatricists be on the staff of obstetric hospitals and that all babies be transferred to their services on the day of birth, a visit to the State Laboratory, and to a clinic at the Troy Day Nursery.

Periodic examination and universal toxin-antitoxin immunization featured the 1923 meeting in New York under Dr. Bartley, with Dr. Richard Smith, of Boston, Dr. Zingher, of New York City, and Dr. Florence McKay, director of the Division of Child Hygiene of the State Department of Health, as the speakers.

In Dr. Card's session at Rochester, in 1924, we had an exceptionally large number of distinguished visitors, including Dr. Bela Schick, of Vienna, Dr. Oliver Kimball, of Cleveland, Dr. Abt, of Chicago, Dr. Alan Brown, of Toronto, and Dr. Park, of New Haven.

Again in 1925, at Syracuse, the chairman, Dr. Joseph Palmer, brought us many visitors. Dr. Mason Knox, of Baltimore, discussed periodic examinations of children, Dr. Thom, of Boston, spoke on mental hygiene, Dr. Helmholtz, of the Mayo Clinic, read a paper on ulcerative colitis, and Dr. Herrick, of Chicago, discussed the chronic cardiac cripple.

When we met in New York City, in 1926, under Dr. Roger Dennett's chairmanship, the new discoveries in scarlet fever were discussed by Drs. Dochey, Park, and Zingher, of New York City, and Dr. Blake, of New Haven, and Dr. McCollum, of Baltimore, gave us the latest discoveries in vitamins.

Since 1927 the chairmanships of the section have been held by Drs. Benson, Donnelly, Leo-Wolf, Aikman, Pease, Kaiser, Doust, DeSanctis, Sincerbeaux, Retan, Williams, Craig, Beaven, Arnold Hawkins, Ashton, Orr, and, now, Dr. Silverman. In 1930 the number of sessions of all sections was reduced to two, so that since that time our programs have been cut in half, a change which may be an advantage to the general practitioner

but which makes the meetings of less value to the specialist. Time does not permit a detailed report of these more recent meetings, most of which my hearers have attended. We have had many distinguished guests, including Drs Morse, of Boston, Harold Cushing, of Montreal, Grulee of Chicago, Tyson, of Philadelphia, Powers, of New Haven, Roundtree, of Philadelphia, and Hess, of Chicago.

We have been kept well posted on the care of the diabetic child by having as our guest Dr Priscilla White, of Boston, in 1932 and again in 1941. In 1932 Dr Kaiser discussed the value of immune adult blood in the treatment of measles and Dr Dennett spoke on the use of nervinol in chorea. In 1934 Dr Retan brought to our attention his method of forced drainage of the central nervous system and the next year Dr Sauer reported on his method of immunizing against pertussis. In 1936 Dr Gordon reviewed the use of thyroid, pituitary, and pituitary-like substances in hypogonadism and cryptorchidism.

In 1938 we were first introduced to the sulfa drugs when Dr Carey, of Boston, read a paper on the use of mandelic acid and sulfamidamide in urinary infections in children, and the following year Drs Emm and Silverman told of the treatment of pneumonia and scarlet fever by sulfamidamide. In 1940 Dr Calvin, of Chicago, brought before us the routine inoculation with tetanus toxoid as a preventative of tetanus, and the following year Dr Glaser, of Rochester recommended a bovine tetanus toxoid for the same purpose.

From the foregoing it will be seen that for over thirty years the section on diseases of children has served the physicians of New York, pediatricians and general practitioners alike, as a postgraduate school at which those who have attended have had brought to their attention all of the latest discoveries relating to the diseases of children. By its efforts and those of similar organizations throughout the country

the practice of pediatrics in two score years has been raised from a subservient position as a despised adjunct of internal medicine to a division of the medical profession which can stand on its own feet and be proud of its accomplishments.

## Discussion

Dr Edward J. Wynkoop, *Syracuse*—Dr Clarke's review of pediatric history, especially of our Section of the State Society, is very interesting.

To Dr Shaw of Albany must go the credit for forming the Pediatric Section of the State Society. Certainly he was an indefatigable worker, and along with Vander Bogart of Schenectady, Pisek and Van Ingen, of New York, Clarke, of Utica, and Sherman, of Buffalo, was instrumental in getting the section started. These men also made a special effort to get those interested in diseases of children to attend the meetings for several years.

Dr Clarke's mention of the inroads of cholera infantum carries one back to the time when we used to have so much diphtheria in hospitals, especially in the orthopaedic wards. The immunization of children with toxoid has made a great change in the inroads of diphtheria in institutions. It has always seemed to me that Coit had not been given enough credit for the splendid work he did in reference to clean milk. He accomplished so much in his efforts to get good milk, and his certified milk filled a great need.

It seems to me that the Section has been very active and that a great many interesting papers by men from out of the State have been presented at our meetings. This influence, I think, has been felt throughout the entire State in promoting health matters, especially as to the prevention and treatment of diseases of children.

Dr Clarke has referred to breast feeding, it seems to me that pediatricians have not used their influence, nor emphasized sufficiently to the mothers the importance of breast feeding. With the present overflowing of the hospitals, and through the necessity to push the patients out rapidly, many times insufficient efforts have been to promote normal breast milk feedings.

## PATIENTS AS HOSPITAL ATTENDANTS

"Two years ago it would have seemed almost too absurd to think about," says Harry Kromer, R N, chief occupational therapist, "but today at Norwich State Hospital, Norwich, Conn., we are actually using patients as hospital attendants."

Selected patients are referred to the medical staff for approval and are then given a short period of instruction, uniforms, keys, special living quarters and a ticket entitling them to eat in a special dining room.

Starting with a few patients at first, 25 were soon serving. In fact, of them

and others have found jobs outside the hospital. Two discharged patients are now on the hospital's pay roll.

"The incredible part of the whole project," Mr Kromer reports, "is that during this period there have been only three demotions for infractions of the rules."

The personnel director at Norwich is running a full page display advertisement on the back page of the hospital's house organ, the *Stylus*, asking relatives and friends of patients to search out and refer to the hospital anyone who is willing to work full time or part time at the hospital.—*Modern Hospital*, June, 1944.

# RECENT ADVANCES IN STUDYING THE PROBLEMS OF HEALING AND THEIR EFFECT ON THE TREATMENT OF WOUNDS AND BURNS

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AT THE beginning of this war, certain definite principles were well established for the care of wounds. Listerism was successful in preventing infection in constructed wounds, yet antiseptics were notoriously unreliable for preventing infection in contused wounds and for terminating the established infection. Infection could usually be prevented in contused wounds by cutting away the damaged tissues, if this was done when the tissues were contaminated with bacteria and not invaded by them. If the contused tissues could not be completely cut away, or if the wound was seen after the period of bacterial contamination was passed, then the infection was best treated by drainage, and not by attempting to destroy the bacteria.

Just before the onset of this war, in 1936-1939, sulfonamides were introduced for the local therapy of wounds, and it seemed as if a new era had arrived in the treatment of wounds. Jaeger,<sup>1</sup> in Germany, as early as 1936, had used sulfanilamide locally in a few accidental wounds. Sinclair,<sup>2</sup> a dentist in Canada, had employed it in 1937, and d'Harcourt<sup>3</sup> used sulfanilamide in seventeen wounds in the Spanish civil war (1938). The present writer, in October, 1938, was one of the first in this country to report on the general use of sulfanilamide to prevent spread of infection from wounds.<sup>4</sup> Incidentally, it might be of interest to mention that this report was given in this city at the Waldorf Astoria Hotel. Jensen and his collaborators<sup>5</sup> and Key<sup>6</sup> popularized the local use of the sulfonamides in this country. They treated a large number of compound fractures and soft tissue wounds with sulfanilamide.

By the time of the retreat from Dunkirk, the British Army was using the sulfonamides locally beneath plaster casts, and in the bombing of London, which followed, Henry Heyl<sup>7</sup> described the situation thus: "We were mighty glad to sprinkle sulfanilamide in all wounds. The wounded were covered with dust from head to foot, their clothing was badly torn, and their skins were black with dirt or crusted blood."

Jensen,<sup>8</sup> however, very early warned that, if there was an excessive amount of dead tissue or foreign body present, local sulfonamides would not prevent infections in wounds, and in my own

publication, mentioned hereinbefore, I wrote as follows:

"It must be emphasized, however, that under no circumstances must the toilet of the wound be neglected. The combination of foreign body and dead tissue plus bacteria is a powerful one for producing infection, and can hardly be defeated by the use of drug alone. Too often the local toilet of the open wound is neglected simply because the wound is going to be left open."<sup>4</sup>

This realization, that the use of sulfonamides could not defeat dead tissue, grew and grew until at the battle of El Alamein it was finally reported that 50 per cent of the wounded reaching the dressing stations had infected wounds, although theoretically sulfonamides were dusted in all. This may or may not, the statement reads, be considered a triumph for the sulfonamides, depending on the point of view, for theoretically 100 per cent of the wounds should have been infected.

Later, though, when the statistics began to come in about the wounds treated locally with and without sulfonamides from the various study units set up by the National Research Council under the direction of Meleney,<sup>9</sup> it was definite that the local use of sulfonamides had not defeated the combination of dead tissue plus bacteria. A distinct gain had been made, however, because the sulfonamides were found to be excellent in keeping infection from spreading from the wound.

To recapitulate, then, the introduction of the local use of sulfonamides had not changed the local treatment of wounds, because the sulfonamides could not reach the bacteria within the interstices of dead tissue. Dead tissue within the wound was still the media for the growth of bacteria, as is dead meat in the test tube, and the amount of it, depending on the amount of contusion and loss of blood supply sustained in the injury, determined whether an infection would develop. If dead tissue could be removed early, excellent healing was obtained; whereas, if it could not be removed, drainage and rest, and not the attack on the bacteria, was still the most successful method of treatment. On the other hand, chemotherapy had added a wonderful new chapter to the general treatment of wounds, for infection was kept from spreading from the local site and the individual was not destroyed, even though the local process was not

Walter Suiter Lecture. Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1944.

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arrested Those who have followed the work of Florey and Cairns<sup>10</sup> in the field with penicillin can discern that this new antibiotic is encountering the same difficulty with dead tissue, and the same difficulty will be encountered with the many new antibiotics, still to be tried

Let us, therefore, turn our attention to what has been done, and what is being done to rid the wound of dead tissue

Three methods of treatment of wounds and burns have previously been partially successful in dealing with the dead tissue or slough Carrel and Dakin,<sup>11</sup> while attempting to devise a solution which would inhibit the growth of bacteria, yet not destroy tissue, also compounded one capable of dissolving slough Dakin's solution, though, begins to lose this property after forty-eight hours, and furthermore, the chlorine solutions modified after it do not have this capacity to dissolve necrotic tissue They are, in other words, only chlorine antiseptics

In the second method of dealing with slough its protein was converted into an insoluble form on which the bacteria could not survive Thus the skin destroyed by burning was converted into a dry, hard eschar by a coagulant, such as tannic acid This method has been abandoned for the present because all the damaged tissue could not be converted and consequently bacteria were able to establish themselves in injured tissue immediately beneath the eschar Tannic acid also destroyed adjacent healthy cells On the beneficial side, though the eschar furnished by this conversion served as a protective film for the body This film prevented recontamination of the burned area by bacteria and in most instances the formation of a surface weeping excessive amounts of exudate and body fluids, until a proper granulating base suitable for grafting could be formed Because of these many good features, the coagulation technique might still be recalled if the undesirable complications could be eliminated

To show how the fundamental idea of coagulation was distorted, however, let us recall how many films were devised in the first year of this war to place on top of unchanged burn tissue on the theory that a film was what was required These inventions did exactly what was not wanted—namely, to leave the burn tissue unchanged and in a moist environment for the bacteria to grow upon

In the third method, exudate was allowed to puddle on the wound inside a cast or in an infrequently changed dressing, and the slough was liquefied by its contained enzymes Enzymes are also elaborated by certain bacteria, such as pyocyanus This method was reintroduced during the last war by Winnett Orr<sup>12</sup> who, dis-

satisfied with the results obtained with Dakin's solution, immobilized infected wounds in casts The method was extended by him afterwards for the treatment of osteomyelitis It was repopularized again by Trueta<sup>13</sup> during the Spanish civil war (1938) Trueta, as nearly as can be told from the records, worked immediately behind the battle fronts, debrided all wounds thoroughly, and opened up the tissue spaces before applying his casts Many of the wounds treated by him were apparently contaminated and not infected Yet, in spite of this criticism, the method was apparently very successful in his hands and under the battle conditions found in Spain at that time Infection did not spread, complications were few, and his mortality was low The Trueta method employed in this war under different battle conditions has not always been successful An account of some of these poor results and a criticism of the method has been written by the French surgeon H Truchaud<sup>14</sup>

Dealing with slough in this manner is, of course, a return to the days of "laudable pus," regardless of whether the method is being carried out in the form of a cast or as pressure dressings, as employed in the treatment of burns today Valuable lessons have been taught, however, by the immobilization infrequent dressing technique (1) rest helps to limit the spread of infection, and (2) recontamination with new bacteria is definitely harmful Recontamination is more harmful during the exudative phase of healing, when it will prolong an infection or establish a new one, than in the granulating period which follows Granulations act as a barrier to the invasion of bacteria multiplying on the surface of a wound

In our search for new methods to deal with slough, we determined to explore the possibility of using substances capable of dissolving proteins and collagen Dead fascia and muscle require the use of strong acids or alkalis or enzymes to liquefy them Alkalis are useless, because repeated applications cause tissues to become edematous and soggy Acids do not do this Acids cause the fibers of collagen or fascia to plump and to loosen one from the other When plumping and loosening are maximal at a pH of about 2.5, collagen goes into solution Of the many enzymes which dissolve proteins, each one has a definite pH range for its activity, although collectively there is an enzyme available for the entire acid to alkaline range There are also certain auxiliary substances which help enzymes to liquefy collagen

The activity of the enzymes and acids in liquefying proteins and collagen and the conditions pertaining to their efficiency were tested by first estimating their capacity to dissolve





FIG. 1. The square under the metal marker is the area of contact with the cautery. The area of burn slough is within the circle. It is beginning to separate spontaneously on the eighteenth day. The area has not been treated.



FIG. 2. Slough of third-degree burn removed by acid and pepsin in four days. Note that fat in the base and the vessels have normal appearance. The area was filled with granulations by the seventh day.

gelatin on photographic plates and to destroy plain catgut, at body temperature, the strand of catgut being a form of collagen. The following enzymes were tested at the pH of their activity: trypsin, enzymol, ficin, keralin, pepsin, and papain with its various activators—i.e., cysteine, etc. The auxiliary substances tried were urea and sodium salicylate. The following acids were examined: succinic, oxalic, acetic, phthalic, stearic, hydrochloric, mandelic, and propionic.

The capacity of a substance to turn healthy tissue into slough was studied by removing a button of skin and placing two or three drops of the agent either on the subcutaneous tissue containing blood vessels or on exposed muscle. Immediate changes were observed as well as those occurring twenty-four hours later. Obviously, the substance employed should not create slough, for it would be pointless to replace slough with slough.

Sloughs were then created by burning the skin of rabbits with an electric cautery (Figs. 1 and 2) at 250 F. for one minute. The times required for the various agents to remove this dead piece of tissue were compared with the times required for unaided separation. The time when the granulations first appeared thereafter was noted (Chart 1). Finally, the capacity of the agent to hinder the rate of regeneration of tissue was

evaluated on a standard wound preparation devised for this purpose.

As a result of these tests, it was found that slough could best be separated without creating more slough and without interfering with the subsequent regeneration of tissue by means of pepsin with hydrochloric acid. Other acids—phthalic, succinic—could also be used in place of hydrochloric. These substances could be incorporated into water-soluble bases and still remain active. Sulfadiazine did not interfere with their activity.

While this work was in progress, Connors and Harvey,<sup>15</sup> working in the same manner, tested out a similar group of acids, including pyruvic. They found that the latter, unlike the other acids, separated slough without the help of enzymes. We have also found this to be true, although it did not dissolve catgut, and have further observed that more rapid separation occurred when pepsin was combined with pyruvic acid. Pyruvic acid also worked when combined

DAYS OF FIRST  
VISIBLE GRANULATION

PEPSIN	6 - 8
ENZYMOL	7 - 9
TRYPSIN	10 - 12
KERALIN	11 - 14

OCCURRENCE OF GRANULATIONS IN BURNS  
TREATED WITH VARIOUS ENZYMES

CHART 1.

with water-soluble bases, and was active in certain concentrations in cholesterolized petrolatum.

The implication of these results for the future treatment of slough is far-reaching. We have had some experience with the treatment of burns with these agents, but the laboratory data have not yet justified their use for the treatment of wounds. In the treatment of burns these agents did not irritate, nor damage normal skin in the concentrations used if they were applied in the proper bases. They were not prohibitively painful. They quickly distinguished third and deep second degree burns from superficial second and first degree burns. They did not convert second degree burns into third. There was less exudation from the burned area. Pus, if produced, was liquefied by acid. Last but not least, slough was separated rapidly, allowing earlier skin grafting. Acidosis has not been produced by the use of pyruvic acid, although the entire leg of an adult has been covered with it in starch paste. This patient, however, received an adequate amount of sodium lactate. Arnold<sup>16</sup> has shown that the number of bacteria in the normal skin is decreased in the presence of acid.

Next, let us turn our attention to the problem of whether wound healing can be stimulated. This possibility has been repeatedly mentioned in the literature, and during this war, we have been forced to test out numerous substances said to stimulate wound healing. Moreover, in the future many more agents of this nature will be proposed, largely because the contained active agent reputedly causes cells to proliferate more rapidly than usual. Therefore, they should hasten the process of healing. Scarlet red, the sulphydryl compounds, balsam of Peru, cod liver oil, Allantoin, and, more recently, bitydne have been used on this basis. Observations have even

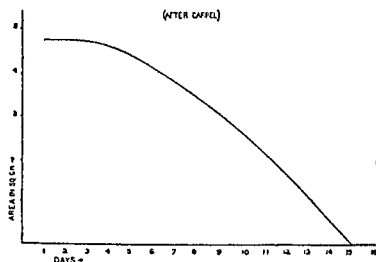


CHART 2. Curve of healing of the open wound.

been made crediting them with stimulating wound healing—"25 per cent increase in the rate of wound healing," or "the wounds healed a day or two faster"—have been recorded, yet all these conclusions are false and, actually, wound healing cannot be stimulated. These false conclusions have been reached through the employment of incorrect methods of measuring the rate of wound healing.

The reasons why the methods employed were incorrect are as follows. As the open wound heals, the changes in its size fall into two distinct periods (Chart 2). In the first one, the dimensions of the wound do not change. This period is known as the lag or latent period of healing, and microscopically it is characterized by exudation and the inflammatory changes. During it bacterial invasion is resisted, dead tissue is liquefied, and the field is prepared for the regeneration of new cells. This period is of somewhat shorter duration in young animals than in adults. Although many factors determine its length, the lag period is terminated by the regeneration of new tissue, and yet to date no one has shortened it by the employment of stimulants unless young animals were used inadvertently. On the other hand, the length of this period has been prolonged by many things: by infection, by frequent dressings, by dry dressings, by continuous wet dressings, and by many therapeutic substances.

In the second period, the size of the wound decreases for two reasons: (1) the surrounding healthy tissues contract; and (2) new tissue is regenerated. In the regeneration, granulations fill the depths of the wound while epithelium covers its surface. In most areas of the body, 75 per cent of the closure of a wound is due to contracture of the surrounding uninjured tissue, and hence the resulting scar is usually much smaller than the original wound. Regeneration



FIG. 3. The dark area in the center is the square of skin which produced the white circle of new epithelium about it. The wound, ten days old, was dressed with vaseline gauze. In the first five days there was no regeneration of new tissue, so that this amount of epithelium was put out in five days. The steel marker measures  $\frac{1}{2}$  cm. Considering this magnification; the rim of new epithelium, measuring 2 cm., represents 30 mm. of new tissue produced in five days, or an extension of 0.57 mm. per day.

of tissue alone accounts for the closure only in certain special areas of the body, where the skin is stretched over bony or fibrous structures. Obviously, if a therapeutic substance stimulating cellular proliferation is applied to a wound closing 75 per cent by contracture, the effect will be partially hidden, while, on the other hand, uncontrolled contracture may give a false result.

Mathematically, too, the rates of decrease of square or circular wounds are usually incorrectly compared. When tissue is regenerating at a constant rate squares always close more rapidly at the beginning of the change than at the end. For this reason, when the rate of regeneration of new tissue is changing, comparison becomes so very difficult that the results are usually misinterpreted. It is only possible to obtain straight lines for comparison by abstracting the square roots of the areas and plotting these against time.

Also, the concept of the controlled wound is often in error. Measuring the rate of wound healing is similar to measuring the speed of a race. The best time required to cover a distance or close a defect must be exceeded to set a new record. Stimulation of wound healing means setting a new record, and unfortunately, too often the so-called controlled wound does not exhibit the best rate of healing, but a retarded one. It will be recalled how easily the latent period can be prolonged.

Last, when a method was employed for evaluating the rate of wound healing with these

previous faults eliminated, stimulation of wound healing could not be demonstrated. In this method the wounds were made on the ears of rabbits, where no contraction occurred. The rate of regeneration of new tissue was measured by means of photography. The amount of extension of new tissue was expressed as a unit of time, consisting of the number of days required to overcome the lag period and to produce a definite amount of new tissue: 2 mm. (Fig. 3). This time was taken as an index of healing for the particular substance tested, and the indices obtained with various substances were scored against each other. When the index was low, 2 mm. of new tissue had been produced in the shortest length of time. When the index was high, either the latent period was prolonged or the amount of new tissue regenerated daily was small. Because these wounds were made under antiseptic conditions, it was assumed that if the index was high, either the medicament had no capacity to maintain bacteriostasis, or that the substances destroyed tissue. Many times a bacteriostatic substance which was known not to interfere with healing was added anyway to ascertain whether the test substance detracted from the optimal rate which it produced.

In this way an optimal rate of healing had been obtained with a lag period of 3.5 days and 2.5 days more required to produce 2 mm. of new tissue, to give an index of 6.0. This has been obtained with sulfadiazine, sulfamerazine and sulfasuxidine, incorporated in an innocuous vehicle which did not destroy cells, and which allowed the medicaments to be dispersed to wounds. It must be emphasized that the base itself must not destroy cells. We also obtained this optimal rate when the vehicle had a pH on the acid side.

Most substances applied to wounds, even with sulfadiazine present, did not produce this optimal rate of healing, but detracted from it. Dr. Henry Simms, my collaborator, has demonstrated why this is so.<sup>17</sup> He is able to keep adult cells alive in a piece of tissue removed from an adult animal by bathing it in serum ultrafiltrate. When this piece of tissue is transplanted twenty-four hours later into a satisfactory culture media, the cells proliferate. If a substance is toxic to cells, a very minute amount of it added to the ultrafiltrate will prevent the cells from growing. In every case where Dr. Simms has demonstrated in this manner that a therapeutic substance is completely toxic in minute amounts, we have failed to obtain a good index of healing. This is not always true with moderately toxic substances. Conversely, when the cells were not killed by minute amounts of the therapeutic substance, optimal healing was obtained. This was the

ease with the sulfonamides mentioned. Incidentally, we also failed to obtain a good index of healing when serum ultrafiltrate was employed on the wound, because this substance, which really keeps cells alive, also stimulates the rate of proliferation of bacteria and causes an infection to develop in the wound.

Finally, it must be emphasized that wound healing is a constantly inhibited process. The length of the lag period and the rate of regeneration are prolonged and retarded by many trivial factors. Moreover, these factors are so constant and so manifold that therapy of wounds will find a new era when we lose the concept of trying to stimulate healing and instead direct attention toward trying to remove or correct the inhibitors of their healing. Rates of healing are usually satisfactory when the inhibitors are removed, and even when maximal regeneration of new tissue is a relatively minor space-closing mechanism as compared to contracture. In other words, when the amount of space to be filled is large and contracture has failed or done its work, then either mechanical approximation or transplantation should be employed and the

regeneration of tissue not relied upon. The process of epithelization, for example, possesses a rate which is so slow that if it were stimulated to twice usual capacity, skin grafting would still be necessary to recover most defects.

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## REHABILITATION CENTER FOR BLIND

A rehabilitation center where blinded veterans of all branches of the service will receive extensive training in such different kinds of work as stenography, typing, filing, general clerical tasks, metal and wood working, operation of small machines, etc. The center is located in the old building of the Avon School, which was leased from the Old Farm Convalescent Hospital and is under command of Col. Frederic Thorne. The purpose of the center is to give the veterans the maximum benefit of their training in service hospitals, which was leased from the Old Farm Convalescent Hospital and is under command of Col. Frederic Thorne. The purpose of the center is to give the veterans the maximum benefit of their training in service hospitals, which was leased from the Old Farm Convalescent Hospital and is under command of Col. Frederic Thorne.

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It is planned to increase the size of the staff proportionally in the event of an increase in the number of

there are 185 blind cases in the service. Not all of them are combat.

in such different kinds of work as stenography, typing, filing, general clerical tasks, metal and wood working, operation of small machines, etc.

The center is located in the old building of the Avon School, which was leased from the Old Farm Convalescent Hospital and is under command of Col. Frederic Thorne.

been selected to assist in helping patients reconcile themselves to their handicaps and overcome them.

These instructors will conduct classes and personal interviews and will teach the men reading, writing, and typing by the braille method. On completion of a patient's social adjustment training, the Veterans Administration will arrange for any additional training he will require to fit him for a job, will help him find a job and maintain contact with his employer in seeing that he makes satisfactory progress.—J.A.M.A., July 22, 1944

## ROENTGEN RAYS IN THE SCIENTIFIC EXAMINATION OF PAINTINGS

in the cloth or paint film, and in the identification of fraudulent paintings and of authorship —J.A.M.A., March 25, 1944

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# TREATMENT OF MENINGITIS WITH PENICILLIN INJECTED INTRAVENOUSLY AND INTRAMUSCULARLY\*

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WHEN penicillin is injected intravenously it is said to accumulate in the spinal fluid in amounts insufficient to be therapeutically effective; hence, intrathecal injection has been recommended. It is uncertain, however, whether or not the presence of penicillin in the spinal fluid is actually necessary to control infection. If the infection involves the meningeal membranes primarily, it would seem that penicillin given intravenously reaches the involved tissues through their blood supply, as it does elsewhere in the body, to exert its effect on the bacteria. Bacteria present in the spinal fluid may represent only those shed from the inflamed membrane, which disappear when the infection is controlled.

Recent consensus deprecates intrathecal therapy for meningitis generally. Spinal punctures should be done chiefly for diagnosis, to determine the effect of therapy and to relieve intracranial pressure. If intravenous therapy with penicillin cures meningitis, there is no need for injecting it intrathecally. Thus far several patients with meningitis have been successfully treated without intrathecal injection, one with pneumococcal meningitis, one with staphylococcal meningitis,<sup>1</sup> and one with meningococcal meningitis.<sup>2</sup>

An opportunity for testing the value of intravenous therapy arose with a patient who had staphylococcal meningitis, but whose lumbar and lower thoracic vertebral tissues were densely calcified from previous osteomyelitis. Rather than inject penicillin intracisternally, it was given by vein. The good result obtained in this case then led to similar treatment with success in 2 patients with pneumococcal meningitis and 2 with meningococcal meningitis. Two deaths occurred, one in a case of pneumococcal meningitis complicating diabetes and one fulminating meningococcal meningitis in a patient with hyperthyroidism.

## Case Reports

*Case 1 (Staphylococcal Meningitis).*—A man, aged 33, had had renal abscess, osteomyelitis of the left forearm and recurrent psoas abscesses between 1930 and 1936, from which he fully recovered. In 1943,

because of pain in his back and legs for six weeks, he entered Jefferson Hospital on October 25, with obvious meningitis. Lumbar puncture could not be made because of extensive regional calcification, but a cisternal puncture revealed cloudy fluid containing 6,000 leukocytes per cu. mm., 95 per cent of which were polymorphonuclear leukocytes, and many gram-positive cocci, which proved to be *Staphylococcus aureus*. Sulfadiazine in doses of 1 Gm. was given every four hours until the amount in the blood reached 10 mg. per 100 cc. Sulfadiazine therapy was maintained for three days, but no significant effect resulted.

Penicillin was then given by the intravenous drip method in doses of 100,000 units daily from November 1 to November 14. Intense itching developed on the fourth day of therapy. The temperature, which had varied from 100 F. to 105 F., gradually diminished and reached normal November 8, eight days after penicillin therapy had been started. The patient, however, was still severely sick and nuchal rigidity persisted. Cisternal puncture on November 7 revealed yellow fluid containing flaky debris, gram-positive cocci, which failed to grow on culture medium, and 42 cells per cu. mm. Because of thrombophlebitis of accessible veins, after November 14 penicillin was given intramuscularly in doses of 2 cc. (8,200 units) every two hours (100,000 units in twenty-four hours), and on November 15, was reduced to 50,000 units in twenty-four hours. By November 22 recovery was well under way, the abnormal neurologic signs had diminished, and the spinal fluid contained only 24 cells, no bacteria, and no growth occurred on culture media. Penicillin was discontinued on November 28, after 1,300,000 units had been given intravenously, and 750,000 units intramuscularly (total 2,050,000 units).

*Case 2 (Pneumococcal Meningitis).*—A white girl, aged 3 months, was admitted to the hospital December 30, 1943, having been sick for three days. She did not eat, had fever, with a temperature of 103 F., and vomited occasionally. There was a staring gaze, the head was rotated to the left, and there was slight nuchal rigidity. The leukocyte count was 6,000. The spinal fluid was turbid; it contained many polymorphonuclear leukocytes, and type III pneumococci. Blood cultures showed no growth. The patient was given sulfadiazine orally for eight days, but failed to improve. On the eleventh day of illness, penicillin was started. She was given  $\frac{1}{2}$  cc. (2,000 units) of penicillin intramuscularly every hour for twelve hours, or 24,000 units; and  $\frac{1}{2}$  cc. intramuscularly every two hours thereafter; that is, approximately 2,000 units of penicillin every two hours, a total of 24,000 units in twenty-four hours. The patient's temperature dropped to 99 F. on the seventeenth day and became normal on the twenty-fourth day of illness.

\* The penicillin was provided by the Office of Scientific Research and Development from supplies assigned by the Committee on Medical Research for clinical investigations recommended by the Committee on Chemotherapeutic and Other Agents of the National Research Council.

From Jefferson Medical College and Hospital, Philadelphia.

spinal fluid cultures were sterile and penicillin was stopped on January 31, 1944. The patient was discharged on February 14.

The total amount of penicillin given was 530,000 units intramuscularly in twenty-four days.

**Case 3 (*Pneumococcic Meningitis*)**—A colored woman, aged 36, a mild diabetic, was admitted to the hospital February 10, 1944, with a history of a draining left ear for two weeks and a severe headache for forty-eight hours. Physical examination revealed sluggishly reacting pupils, drooping of the posterior wall of the membranous portion of the aural canal, nuchal rigidity, fever, with a temperature of 102 F, and bilateral Kernig's and Brudzinski signs. The spinal fluid was turbid, it contained 9,000 cells per cu mm, mostly polymorphonuclear leukocytes. Type III pneumococci were present in the spinal fluid, and in the discharge from the ear and from the nasopharynx.

The patient was given penicillin, 100,000 units daily, by continuous intravenous infusion. The temperature returned to normal on the fourth day of treatment and on the seventh day the daily dosage was reduced to 50,000 units daily and continued for six days. On March 3 the patient was symptom-free and was discharged on March 7, 1944.

The total amount of penicillin given was 1,000,000 units intravenously by continuous intravenous infusion, over thirteen days.

**Case 4 (*Meningococcic Meningitis*)**—A colored boy, aged 5, developed a typical case of meningitis on January 23. On January 25, he became stuporous and at the time of admission to the hospital had a temperature of 103 F, pulse 120, and respirations 32. Physical examination showed nuchal rigidity and bilateral Kernig's sign. The spinal fluid was under increased pressure and contained 2,000 cells per cu mm, 95 per cent of which were polymorphonuclears. The stained smear showed occasional gram-negative diplococci, and *Neisseria meningitidis* was cultured from the spinal fluid. The blood culture showed no growth.

Penicillin was begun on January 25 at 2:00 P.M. The patient received 25,000 units of penicillin in 1,500 cc of physiologic saline solution by continuous intravenous infusion, in twelve hours. After 2:00 A.M. on the following morning, January 26, 4,200 units of penicillin were given every two hours intramuscularly. The temperature became normal sixty hours after the penicillin was started. Spinal fluid secured on January 29 showed 18 cells per cu mm, predominantly polymorphonuclear leukocytes, no organisms in the stained smear, and no

growth of his neck. Physical examination revealed nystagmus, unequal pupils, and nuchal rigidity. Kernig's sign was positive bilaterally and there was a positive Brudzinski sign. The leukocyte count was 20,000. Blood culture showed no growth. The spinal fluid was cloudy and contained many gram-negative intracellular diplococci, the cell count was 6,000 per cu mm.

Penicillin was given by continuous intravenous infusion in 100,000 unit dosage every twenty-four hours for five days. Spinal fluid was sterile thirty-six hours after beginning treatment. A neurologic examination on February 25 was normal and the patient was discharged on February 29, symptom-free. A total of 500,000 units of penicillin was given over a period of five days.

#### FATAL CASES

**Case 6.**—F L, a 54-year-old colored woman in coma, was admitted to the hospital on January 18, 1944. The day before she had had dull headache. The morning of admission she did not feel well enough to work and her husband later found her unconscious. There was nuchal rigidity and bilateral Kernig's sign. The spinal fluid was cloudy and showed 5,300 cells per cu mm, the majority of which were polymorphonuclear leukocytes and type VIII pneumococci. A continuous intravenous infusion of penicillin, 100,000 units daily, was started, but the patient died eight hours after admission, after only 40,000 units had been injected. This patient had pneumococcic meningitis complicated by diabetes mellitus and died without regaining consciousness.

**Case 7.**—C H, a white woman, aged 31, while under treatment for hyperthyroidism, complained of generalized malaise and mild frontal headache on February 8, 1944. Physical examination revealed nothing to account for her symptoms. When she vomited without preceding nausea, a spinal puncture was done. The spinal fluid was slightly cloudy, contained 175 cells per cu mm, and gram-negative intracellular diplococci, proved later to be meningococci. Shortly after this, small purpuric areas appeared over the whole body. Penicillin therapy was immediately begun by continuous intravenous infusion, each liter of physiologic saline solution containing 33,000 units of penicillin. The patient became stuporous, had convulsions, and died seven hours after penicillin was started. The blood culture was positive for meningococci. This patient had a fulminating meningococemia and meningitis complicating hyperthyroidism.

As in other bacterial infections, it seems that a certain proportion of patients with meningitis, especially those who have other diseases as well, or with fulminating infections, will fail to respond to any form of treatment.

#### Summary

Two patients with acute meningitis complicating other systemic disease died a few hours after penicillin therapy was begun. Five patients with

charged on February 16.

The dosage was 25,000 units intravenously during the first twelve hours and 4,200 units intramuscularly every two hours for 328,000 units, or a total of 352,800 units of penicillin in a period of nine days.

**Case 5 (*Meningococcic Meningitis*)**—A colored man, aged 37 years, was admitted to the hospital February 16, 1944, with severe headache, vertigo, sharp pains in his abdomen and lower back, and stiff-

it is important to give the patient more details pertaining to the preparation and quantity of these various food articles. It is also advisable for the physician to know the whys and wherefores for these various steps.

*Milk.*—Practically every patient with active ulcer is started on milk, a glassful, about 8 ounces, not a cupful (6 ounces), *every hour*, if he can possibly stand it, and usually he can—ordinary good milk, irrespective of its cream content. Sippy's advice to use certain percentages of cream and milk is too complicated and, from a practical standpoint, unnecessary. The hourly feedings should be kept up from the moment of arising to the moment of retiring, and a thermos bottle of milk should be kept at the bedside of the patient, so that a glassful may be taken if he awakens during the night. In this way, the patient consumes at least  $2\frac{1}{2}$  to 3 quarts of milk and, right from the start, obtains sufficient nutrition and a sufficient number of calories (1,500 to 2,000). The patients lose very little weight during their treatment.

The milk should not be taken ice cold; it may be room temperature or lukewarm, or hot if sipped. It should be taken alone—no crackers and no toast. If it should cause discomfort in some patients, owing to the formation of large curds, it should be modified by peptonization or the addition of lime water (a tablespoonful to the glass), or by the addition of sodium citrate (15 grains to the glass) or sodium bicarbonate (3 to 5 grains to a glass). All of these methods help to make the curds smaller. Naturally there is no objection if a patient wishes to add cream to his milk. It is unnecessary to drink any water because milk itself is 87 per cent water.

Occasionally one meets with patients who simply cannot take plain milk. They may be permitted to add a tablespoonful of a cereal coffee (like Postum) to a glass of milk or they may take buttermilk or any of the sour milk preparations. The patients are kept on a straight milk diet for two to three days. Some, who like milk, continue longer of their own accord because they find such a marked contrast to their previous state of misery and discomfort. If an individual is allergic to cow's milk, he may try goat's milk, or one may be forced to skip the milk period entirely.

*Eggs, Custards, Junkets, Gelatins.*—The eggs may be taken raw, shirred, very soft-boiled, or lightly scrambled with milk (not with butter, because the frying breaks up the butter into a fatty acid); if the patient absolutely dislikes eggs prepared in any of these ways, he may take them hard-boiled (for one half-hour or longer) and grated, and fresh butter may be added. Very little salt should be used. The intervals of feedings should still be one hour, but the patient may

alternate the eggs and the milk, or he may take the eggs and milk mixed together or separately at one feeding. There is no limit to the number of eggs that can be taken during twenty-four hours (6 to 8). If enough eggs are taken, a proportionate amount of milk may be eliminated. Raw egg white leaves the stomach very quickly and gives very little gastric stimulation. No omelette and no fried egg should be given. The poached, shirred, and soft-boiled eggs are found to be the most easily digested. In addition to the eggs, the patients are permitted custards, junkets, and gelatins. Junket is just another form of milk; custard is just another form of eggs; fruit gelatins give very little acidity, and leave the stomach rapidly—in one and a half to two hours. These foods, however, represent to the patient something solid, which is what they all ask for—something to bite into. The hourly feedings are kept up; milk may be taken alone or in smaller quantities together with the custard or jello, or the eggs may be taken alone or together with the custard or jello, etc. This routine is followed for three days. In fact, some have felt so well that that they have adhered to milk and eggs for longer periods of time. One patient who had a pyloric obstruction and who refused operation gained over 20 pounds in weight on milk and eggs combined with gastric lavage over a period of six weeks. The obstruction cleared up.

*Cereals.*—For the next three days, cooked and strained cereals are added: strained oatmeal gruel, cream of wheat, farina, arrowroot, strained hominy, pettjohn, strained barley gruel, or Pabulum; occasionally wheatena. This gives a wide variety. The oatmeal should be soaked overnight and boiled for several hours the next day and then strained, or cooked the night before and recooked the next morning. The cereals may be mixed with cream or milk, and seasoned with sugar, a little salt, and as much fresh butter as desired. A cereal may be taken twice a day, alone or added to the other foods to make a more substantial meal. For example: breakfast—cereal, eggs, and milk; lunch—eggs or custard, milk and jello; supper—cereal, eggs, and milk, but no toast, bread, or crackers. In between these meals, milk must be taken as nearly hourly as is possible, according to the comfort of the patient. Milk should be continued before retiring and during the night if the patient awakens.

*Cream Soups.*—The next addition is cream soups: cream of asparagus, cream of pea, cream of corn, cream of carrot, cream of mushroom, and occasionally cream of tomato, but not cream of spinach soup. Spinach is a strong secretagogue. The cream soups should not be made from meat stocks and should not be thickened with any, or only a very little flour. These cream soups con-

tain simply the essence of the vegetables in the form of a fine suspension mixed with milk and cream. For patients who do not have adequate cooking facilities at home, these soups may be easily prepared from dried vegetable flours or infants' puréed vegetables bought in cans, to which are added hot water or hot milk and cream. Oyster stew without the oysters may also be included in this group. Cream soups with their high fat content make an important addition to the diet. Thus a patient can now have a semblance of three main meals a day. For example: breakfast—cereal, eggs, and milk, lunch—eggs, cream soup, and milk, supper—cream soup or cereal, eggs, milk, jello or custard, etc. The milk feedings between meals must be continued.

**Potatoes, Etc.**—For the next three days are added potatoes, rice, noodles, spaghetti, macaroni. It is preferable to have the potatoes baked (and then mashed with a good deal of sweet butter) rather than boiled, because during the process of boiling they lose about 18 per cent of their mineral content and 8 to 16 per cent of their protein. One may permit baked sweet potatoes. The latter have higher caloric value, they contain more fat, starch, and minerals, but only half as much iron. A cream soup of potatoes becomes a relished addition. The noodles, spaghetti, or macaroni should be boiled and flavored with a plain butter or cream sauce, or a light mushroom sauce (without the mushrooms) or a little cream cheese or pot cheese, but no tomato sauce or highly seasoned cheese. The rice must be boiled for hours, until it is very soft, and then mixed with milk or cream, sugar, or very little cinnamon, may be added if desired.

**Bread.**—Most patients crave bread in some form and most patients suffering from hyperacidity eat a good deal of bread, but it is not a suitable food for them, and very frequently is the sole cause of their discomforts. This is particularly true of fresh bread, whether it be white, rye, whole wheat, or gluten. Bread is better tolerated if it is sliced very thin and then baked hard and dry in the oven—so-called melba toast, either white or dark. The harder the bread the more necessary are thorough mastication and pulverization, so that it may be more readily digested in the mouth. With each meal a patient may have several slices of melba toast with plenty of sweet butter or cream cheese. There are a number of such toasts on the market. As a substitute one may use dry crackers, crisp zwieback, pulled bread, Holland rusks, or Italian bread sticks.

**Cooked Vegetables.**—The next addition is cooked vegetables, puréed—finely mashed or strained—once a day.

Steamed vegetables are better than boiled be-

cause they do not lose so much of their mineral salts. Those allowed are a purée of peas, lima beans, squash, pumpkin, carrots, and string beans, those to be excluded are cabbage, broccoli, mushrooms, tomatoes, Brussels sprouts, corn, and spinach. Spinach, although it can be finely divided and creamed, increases gastric secretion and gastric acidity more than most vegetables. It is supposed to contain a hormone, secretin, which stimulates gastric secretion even when it is instilled into the duodenum.\*

With the addition of vegetables, the patient has a comparatively liberal selection of foods, so that he can remain on this diet for longer than three days. If the patient is sufficiently impressed with the importance of a thorough healing of the ulcer by this prolonged dietetic method, one is less liable to encounter much objection. He can now very readily take three main meals for example, breakfast—cereal, toast and butter, eggs and milk, lunch—cream soup, potato, green vegetable or eggs, and milk, supper—cereal, noodles or rice, eggs or cream soup, custard, junket or jello, and milk. Milk must be continued between meals and before retiring, even when patients are on a full diet.

**Fish.**—The next addition is lean and tender fish, boiled or broiled, seasoned with a little lemon juice and butter melted on the hot plate or on the hot fish. Drawn butter, cooked over a high flame, is not advisable, as the high heat breaks up the butter into a fatty acid, while melting the butter more gently on a hot dish does not. Fish of the lean type are halibut, cod, scrod, sole, pike, pickerel, perch, flounder, striped bass, brook trout, and red snapper. The fat types of fish, to be avoided, are bluefish, whitefish, salmon, mackerel, sardines, shad, eel, pompano.

For those patients who like fish, this addition provides a diet which makes it simple for the management of the general household and of ample variety to satisfy the patient for a longer period of time. At first, the fish should be given only every other day, to see how it is tolerated.

**Poultry and Meats.**—One generally starts with the white part of chicken, either boiled or broiled or hashed. This is a short-fibered lean meat, whereas beef is long-fibered. At first the chicken should be given every other day, alternately with the fish.

Next, one may add finely chopped or scraped lean beef, either grilled or raw, but not fried. Later on, a tender lamb chop, a little roast lamb, and sliced boiled ham may be included in the menu.

Fish and meats are true intragastric stimulants, they require a long period of digestion, which necessitates a large amount of gastric work, and they stimulate a high acid output,



these disadvantages are somewhat counterbalanced by the fact that they absorb a comparatively larger amount of acids. The more fat in the fish or meat, the longer the emptying time of the stomach, which in turn means a longer period of motor and secretory activity. The lean fish are digested more easily than the meats. Small portions are more readily taken care of.

*Desserts.*—With the addition of meats the patients are on a full diet, with the exception of desserts. These can now be added in the form of finely puréed applesauce (made from sweet eating apples) or a purée of cooked sweet peaches or eating pears; no berries; no rhubarb.

The patients frequently have a hankering for sweets. Almost fifty years ago, Strauss<sup>10</sup> found that sugar solutions reduce gastric secretion. Sweet desserts have therefore frequently been recommended as permissible in cases of hyperacidity, but if gastric atony is associated with hyperacidity, the sugars undergo fermentation and increase the already existing heartburn or flatulence. Honey is frequently well tolerated. Pastries, heavy pies, rich cakes, and mixed puddings are forbidden. In addition to the custards, junkets (either plain or chocolate), and fruit gelatins, given very early in the diet, later on may be added blancmange, light soufflés (vanilla, lemon, or less frequently chocolate), corn starch pudding, rice pudding, and also plain dry cookies, plain sponge cake, or lady fingers. Candies depress secretion and delay evacuation in proportion to their sugar content and the amount of candy ingested. They are greatly influenced by the flavoring substances and added ingredients, such as milk, eggs, or chocolate. Chocolate candy seems to give higher acid figures than the plain sugar candies. Simple gumdrops leave the stomach rapidly, with little acid production. This list gives the patients a variety of desserts which always makes them more content.

Very often I have found that patients' complaints about restrictions in their diet were due to the indefinite way in which the physician recommended the regimen; and this occurred because the physicians themselves were not convinced. It is to overcome this uncertainty that I have worked out the above regimen in such detail. As it stands, it is the diet I advise for cases with discomfort from hyperacidity. The ulcer patients must follow it strictly for at least six months to a year or longer. However, during this time, when the patients will be doing well, they will ask for additions to their diet, and the physician must be prepared to answer many questions and give more liberties now and then. In order to do this wisely, the following knowledge concerning the other food elements will be of great aid.

*Raw Fruits and Fruit Juices.*—On account of their roughage and their tendency to stimulate gastric secretion, these foods are generally eliminated for a long time. Overindulgence in fruit juices, pure or diluted, is one of the frequent causes for distress in patients with hyperacidity. Very often we observe attacks of hyperacidity after fresh fruits have come into season. There is a wide individual variation in tolerating the different organic acids. More people get discomfort from orange juice than from grapefruit. The layman has been brought up with the faulty impression that orange juice is an efficient alkalinizer.

He does not realize that this applies to its effect upon the general system rather than its direct action in the stomach. Here it evokes a high acidity for an hour.<sup>11</sup> From the standpoint of the vitamin C requirement, it may be wise to let the patient have about 4 to 6 ounces of fruit juice daily, after he has reached a full diet for several weeks, or it may have to be given at any time if he shows any signs of vitamin C deficiency. This occurs very rarely, however. Experience should induce people to avoid whatever fruit that they have found is likely to provoke distress. They may tolerate, in small amounts, very ripe, almost dark bananas, very ripe, soft peaches, persimmons, sweet California grapes, and hothouse grapes. Occasionally patients may be permitted to chew the various fruits in order to get the juice if they do not swallow the pulp of the fruits (cantaloupe, watermelon, and other melons) No berries.

*Raw Vegetables.*—What has been said about raw fruits applies equally to raw vegetables—namely, that their roughage makes them inadvisable. Thus salads, celery, cucumbers, olives, pickles, cabbage, etc., are prohibited. Large quantities of vegetable juices are also not advisable because of their secretagogue effect. The present indiscriminate wave of enthusiasm favoring the use of raw vegetables or vegetable juices is exaggerated in importance; but one may add about 4 to 6 ounces of tomato juice daily when the patient has fared well with his diet.

*Cooked Vegetables.*—To those vegetables already permitted may be added asparagus tips and puréed beets, the tops of young cauliflower, artichoke bodies, oyster plant, and, rarely, tomatoes.

*Shellfish.*—The difficulty with shellfish, from the gastric standpoint, is their coarseness rather than their secretagogue action. One may permit an oyster or clam stew, not highly seasoned, but only the very soft part of the oyster or clam should be taken. Once in a great while one may allow an especially tender and finely divided broiled lobster or a soufflé of lobster; otherwise

the fibers are too coarse. *Caviar*, if not too salty, is permitted.

*Meats, Poultry, and Game*—As has been said, the basic diet for hyperacidity includes chicken scraped or chopped meat, thinly sliced boiled ham, lamb chops, roast lamb, white meat of turkey, quail, pheasant, and, rarely, soft veal. After a patient has done well for three or four months he may be permitted a thin slice of very tender roast beef. Whether it is rare, medium or well done makes no difference as far as the emptying time or wave of acid secretion is concerned. Beefsteaks are only rarely tender enough. Pork is difficult to digest because of the fat surrounding the meat fibers. A soft sweetbread, broiled or en *casseroles*, or sheep's brains may be permitted, if prepared without grease or frying. Veal is allowed only if very tender. Occasionally a small portion of calf or chicken livers, broiled may be taken without difficulty. Kidneys are too hard and tough. Goose duck, tongue and spiced meats are on the forbidden list.

*Soups*—Only the cream soups mentioned before are allowed, no plain bouillions, broths, or beef extracts, as they are highly secretagogue. Occasionally a jelled consommé.

*Cheese*—The highly seasoned or spiced varieties, such as *cammembert*, should be omitted.

*Nuts*—Nuts are rough and irritating to the mucous membrane, but almonds are an excellent antacid. I have often advised a combination of finely ground sweet almonds (nine parts) and finely ground bitter almonds (one part) in half-teaspoonful doses for relieving the sensation of heartburn, instead of bicarbonate of soda.

*Beverages*—Milk is without doubt the ideal drink. It cannot be advised too often that even when ulcer patients are on their so called full diet, milk of some kind, plain or malted, should be taken once or twice between meals and before retiring. If at all feasible, coffee should be strictly forbidden at all times. It is a strong gastric stimulant, irrespective of whether it is free of caffeine or not, because it is the oil extractives and the flavoring agents which cause the secretion. Weak tea is decidedly less stimulating than coffee but should be prepared fresh and not strong. Cocoa, although more stimulating than tea, is better than coffee and may be used as a change, particularly a bitter cocoa, if prepared weak with water and with milk. Some patients get a feeling of fullness after cocoa, and this is probably due to an excessive amount of secretion which the cocoa may cause. Any of the cereal substitutes for coffee, such as Postum, is all right. Many people like to finish their meals with a warm drink. A little hot water, a weak infusion of breakfast tea or camomile tea or peppermint tea may be taken.

It has been shown that peppermint actually hastens the emptying time of the stomach.<sup>11</sup>

### Bad Habits in Eating and Drinking

There are certain bad habits of eating and drinking that the patients must be warned against.

*Do not drink water with meals*. I consider this one of the most important rules to be observed in cases of hyperacidity. In fact, any liquid with a full meal is inadvisable, especially if a soup has been included. It is best to take the meals dry. If no soup has been consumed, a glass of milk is permissible. Plain water is a strong gastric stimulant. I have seen 50 cc of water stimulate 250 cc of gastric juice of high acidity and high peptic activity. I have employed plain water as a test meal instead of the Ewald breakfast and found it just as efficient.<sup>12</sup> Iced water is particularly harmful, and the American habit of drinking glassful after glassful of iced water with meals is to be absolutely condemned. I have noted many a case of digestive difficulty clear up entirely when this unfortunate custom is stopped. It takes about twenty minutes for a glass of ice water, when drunk, to become the normal temperature of the body, during this time there undoubtedly is a delay in the digestion, large amounts of iced water bring about a correspondingly longer delay. Furthermore, the rapid transit of iced water into the upper small bowel can have a deleterious effect upon the biliary tract, liver and pancreas. For similar reasons, ice cream or ices, especially if eaten rapidly, are not the logical dessert after a big meal. They are less harmful if taken occasionally in small portions and eaten very slowly, between meals, instead of the milk. The taking of water or liquids with meals is particularly contraindicated in those cases in which the secretory disorder is combined with motor inefficiency. With undisturbed motor activity, a moderate amount of fluid taken with or at the end of a meal may help to dilute the acid secretion and may be permitted to those who are particularly habituated. For this purpose I prefer one of the natural or artificial alkaline waters. If they are highly carbonated, it is wise to stir out the gas before drinking them.

Finally, there are other dietary principles that should be observed—namely, to avoid rich foods, tough foods and fried foods, to avoid seasoning of foods with an excess of salts, spices, or condiments, to eat slowly and masticate thoroughly, not to eat heavily when physically tired or emotionally upset.

### Discussion

I realize fully that critics of such a fixed regimen for ulcer patients may consider it impractical to have the same routine of diet for every patient.

# MINIMAL CHEMOTHERAPY IN PNEUMONIA

## Preliminary Report of a Two-Dose Ten-Gram Method Using Sulfathiazole and Sulfadiazine

LUIGI P. MINETTO, M.D., New York City

THE present communication is a report of an investigation of 30 cases of acute pneumonia treated with sulfathiazole and sulfadiazine which totaled only 10 Gm. in each case. The results were eminently satisfactory in the great majority of instances, with a rapid fall in temperature to normal, prompt clearing of the pulmonary lesion roentgenologically, and complete absence of toxic manifestations. These cases are presented in the hope that future work by other investigators may give sufficient data to allow the merits or disadvantages of the method to be better evaluated.

The diagnosis of pneumonia was determined by clinical history, physical examination, roentgenogram, and sputum typing. The method of treatment consisted of the oral administration of an initial dose of 2 Gm. of sulfadiazine and 3 Gm. of sulfathiazole, followed six hours later by a second dose of 5 Gm. of sulfadiazine. Equal parts of sodium bicarbonate were administered with each dose.<sup>1</sup> Sulfathiazole was used in conjunction with sulfadiazine with the initial dose,

because it is rapidly and evenly absorbed from the gastrointestinal tract, absorption being complete within three to six hours.<sup>2</sup> Sulfadiazine, which is less rapidly absorbed and more slowly excreted, was used to maintain a more evenly prolonged blood level.<sup>3,4</sup> Supportive therapy was stressed. At least 2,000 cc. of fluids were given daily, along with sodium chloride to facilitate its administration.<sup>1</sup> Barbiturates were administered to relieve restlessness. Intranasal oxygen was given when indicated.

On admission sputum typing, blood culture, blood count, urine analysis, and roentgenogram were obtained. Another blood count was performed twenty-four hours later. Urine analyses were performed for three consecutive days. The roentgenogram was repeated six days after admission. Sulfadiazine blood levels were taken the morning after admission and twenty-four hours later.

Complete success with excellent results was obtained in 25 cases (see Table 1). Critical drop of the temperature to normal by crisis occurred in 24 patients within forty-eight hours. In one patient the temperature became normal by lysis in sixty hours. The roentgenographic clearing

Formerly Resident Physician, the Second Medical Division, Service of Dr. B. F. Donaldson, City Hospital, Welfare Island, Department of Hospitals, New York City.

TABLE 1

Case No.	Age, Sex	Treatment After Onset (Days)	Type	Lobes	Sulfadiazine Level in Mg.	Temperature Response (Hours)	X-Ray Clearing After Administration	Days	Clinical Response
1	59, M	2	..	LL	14	16	Marked	6	Excellent
2	78, F	4	..	RL	12	16	Marked	5	Excellent
3	14, M	2	5	RM	6	20	Marked	5	Excellent
4	29, M	1	7	RU	5	36	Moderate	6	Excellent
5	86, F	3	..	RL	5	12	Marked	7	Excellent
6	76, F	3	23	RL	8	16	Marked	5	Excellent
7	76, F	1	..	LU	10	24	Marked	6	Excellent
8	40, F	1	..	RL	9	..	Moderate	3-7	Poor
9	47, F	4	19	RL	5	16	Moderate	7	Excellent
10	56, M	2	31	RU, RM, RL, LL	7	96	Moderate	14	Good, 3 doses
11	14, M	3	17	LL	6	36	Marked	5	Excellent
12	20, F	4	..	LL	12	16	Moderate	9	Poor
13	44, F	2	7	LL	5	16	Marked	8	Poor
14	41, F	4	5	LL	5	20	Marked	7	Excellent
15	47, F	1	3	RM, LL, LU	9	60	Marked	9-14	Excellent
16	47, M	2	..	LL	4	40	Marked	9	Excellent
17	60, F	2	..	LU	7	40	Marked	6	Excellent
18	45, M	5	..	RL	2	12	Marked	4	Excellent
19	21, M	2	1	LL	7	72	Marked	6	Good, 3 doses
20	37, M	1	3	LL	4	20	Marked	6	Excellent
21	46, F	2	..	LL	6	12	Marked	10	Excellent
22	58, M	2	..	RL	3	24	Marked	3	Excellent
23	24, F	1	..	LL	6	16	Moderate	6	Excellent
24	30, M	1 1/2	13	RL	6	24	Marked	9	Excellent
25	40, F	1 1/2	3	LL	11	16	Marked	10	Excellent
26	50, F	2	..	RL	7	12	Marked	8	Excellent
27	42, F	2	..	LL	10	32	Moderate	10	Excellent
28	34, M	3	12	LL	5	8	Marked	6	Excellent
29	43, M	1	..	LL	4	36	Marked	6	Excellent
30	70, M	1	6	RM	8	16	Marked	6	Excellent

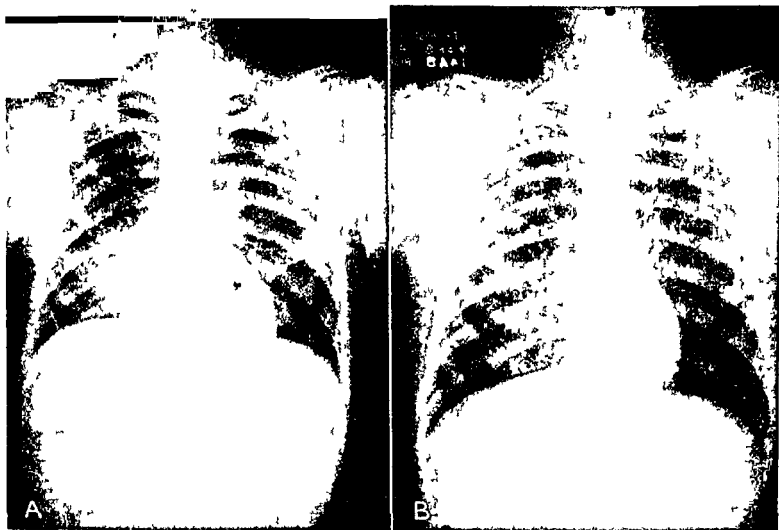


FIG 1 Case 3 Roentgenograms of chest A—Taken day of admission B—Taken five days later

of the consolidating process was marked in 21 patients and moderate in four. A typical temperature curve and roentgenographic clearing is shown in Chart 1 and Fig 1.

A slight secondary temperature rise was noted in 6 of the 25 cases. Progression of symptoms or lesions was not encountered. General clinical improvement was excellent after the initial critical temperature drop. Five of the cases showed the same degree of marked roentgenographic clearing of pulmonary lesion as those cases that did not have a secondary temperature rise. Moderate roentgenographic clearing was present in one case. This type of temperature curve is demonstrated in Chart 2.

### Case Reports

Two cases were partial failures.

**Case 10**—A 56-year-old white bartender showed massive involvement of four lobes with marked dyspnea, cyanosis, and delirium tremens. Two doses produced only moderate improvement. Temperature declined gradually from 104 to 102 F within sixty hours. Seventy-two hours after the second dose, a third dose of 5 Gm. of sulfadiazine was administered. The temperature dropped to normal eight hours later. There was no secondary temperature rise and the patient continued to improve clinically. The roentgenogram showed moderate clearing in fourteen days.

**Case 19**—A 21-year-old male Puerto Rican defense worker was admitted in an extremely toxic condition. There was only moderate clinical improvement, and forty-four hours after the second dose of sulfadiazine a third 5 Gm. dose was administered. The temperature dropped to normal by crisis within sixteen hours, without any secondary rise. The roentgenographic clearing was as marked in seven days as those cases that were completely successful. This case is illustrated in Chart 3.

Three cases were completely unsuccessful and the standard method of sulfadiazine therapy had to be instituted.<sup>6, 8</sup>

**Case 8**—A 40-year-old Puerto Rican housewife with a 4 plus serology was admitted, acutely ill. Clinical response was fair to two doses of chemotherapy. A third 5 Gm. dose was administered thirty-one hours after the second dose proved to be ineffectual, and the temperature remained elevated, fluctuating between 102 and 104 F. One Gm. of sulfadiazine every four hours was started eight hours later, with slow but definite improvement. The temperature dropped by lysis to normal on the seventh hospital day. Roentgenographic clearing was moderate after seven days.

**Case 12**—A twenty-year-old Negress with a 4 plus serology did not improve clinically with the two doses, or with a third dose of 5 Gm. of sulfadiazine administered thirty hours later. Ten hours after the third dose, 1 Gm. of sulfadiazine was given every four hours. Her temperature fell by lysis

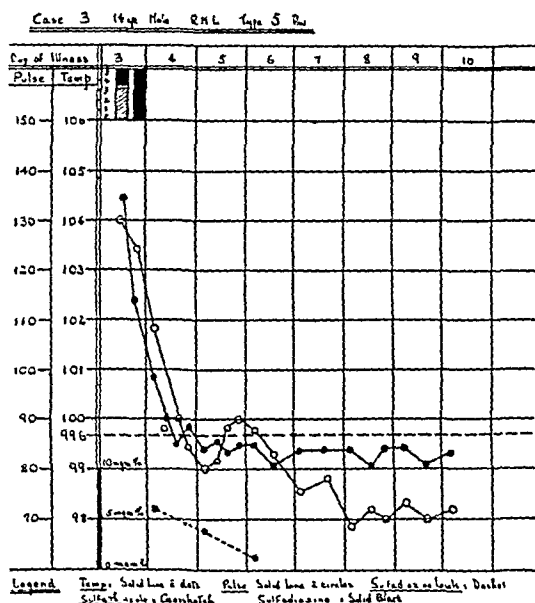


CHART 1

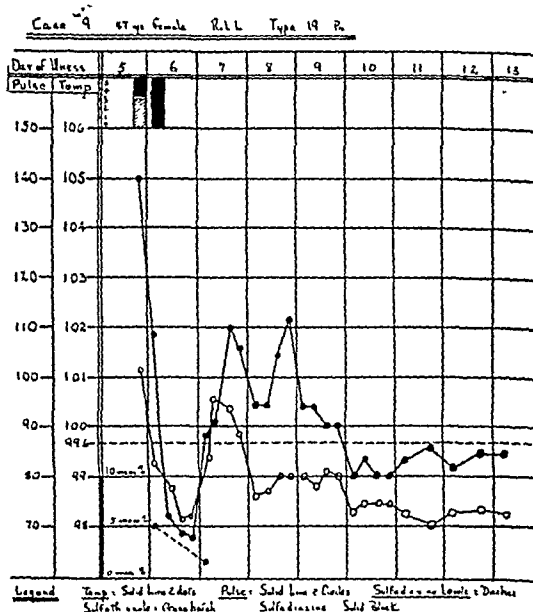


CHART 2

from 105 F. to normal on the seventh hospital day. Roentgenographic clearing was moderate after seven days. A complicating factor in this case was vaginal bleeding for ten days which necessitated a 500 cc. transfusion.

**Case 13.**—A 44-year Negress did not show progressive clinical improvement after a third 5 Gm. dose of sulfadiazine was administered forty hours after the second dose. Eight hours later 1 Gm. of sulfadiazine was given every four hours for five doses, with marked clinical improvement. Her temperature became normal on the fifth hospital day. Roentgenographic clearing was marked after eight days. This case is illustrated in Chart 4.

Positive sputum typing was obtained on 15 patients. The pneumococci typings were distributed as follows: One case each of Types I, VI, XII, XIII, XVII, XIX, XXIII, and XXXI; two cases each of Types V and VII; and three cases of Type III. Blood cultures were sterile. The leukocyte count averaged 20,000, and ranged from 9,000 to 34,000. Blood counts taken twenty-four hours later were not remarkable. Urine analyses performed for three days did not show any abnormalities.

Roentgenograms of the chest were repeated within an average of six days after admission; the interval ranged from three to fourteen days. The clearing was considered marked when there was a faint trace of, or no evidence of the consolidating process as compared with the admission film. In reviewing cases of pneumococcal pneumonia treated by the standard method of sulfadiazine dosage and comparing the results with the two-dose method, it was noted that the roentgenographic clearing was more prompt and complete in the latter in a great majority of instances.

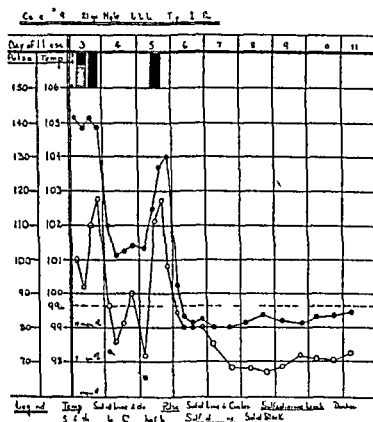
Sulfadiazine blood levels were obtained the morning after admission and twenty-four hours later. The initial sulfadiazine blood levels were taken within an average of twelve hours after the first dose had been administered, and the time of taking these levels ranged from two to twenty hours. The blood levels averaged 8 mg. per 100 cc. of blood in twelve hours, and then gradually declined to 5 mg. per 100 cc. of blood in twenty-four hours, and varied from 1 to 2 mg. per 100 cc. of blood in forty-eight hours. Past experience has failed to show any correlation between the therapeutic effectiveness of the drug and the concentration of free drug in the blood. Many of the blood levels during the therapeutic phase were below the 5 mg. per 100 cc. of blood considered as the proper level for therapeutic effectiveness.<sup>9</sup>

There were no toxic reactions in any of the 30 cases. Nausea, vomiting, crystaluria, hematuria, anuria, skin rash, drug fever, agranulocytosis, and hemolytic anemia were entirely absent.<sup>10</sup> The lowest dosage of sulfadiazine reported in the literature as the cause of a toxic reaction was 11 Gm.<sup>11</sup> In this instance the patient had received 11 Gm. of sulfadiazine, which led to anuria. The possibility of sensitization by a previous course of sulfathiazole treatment was present in this case.

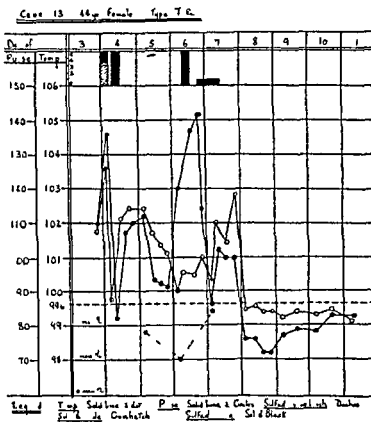
No complications were noted.

### Summary and Conclusion

Thirty consecutive cases of acute pneumonia were treated orally with an initial dose of 2 Gm. of sulfadiazine and 3 Gm. of sulfathiazole, fol-



### CHART 3



#### CHART 4

lowed six hours later by a second dose of 5 Gm of sulfadiazine. Twenty five cases were completely successful, with excellent clinical and temperature response. Marked roentgenographic clearing of the consolidating process was noted in 21 cases within an average of six days after admission. Two cases were partial failures and necessitated a third dose of 5 Gm of sulfadiazine, with excellent results. Three cases were completely unsuccessful and the standard method of sulfadiazine therapy had to be instituted. Toxic reactions or complications were not encountered.

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## HORACE WELLS CENTENARY CELEBRATION

This year marks the one hundredth anniversary of the discovery by Horace Wells, a Hartford dentist, of the anesthetic effects resulting from the inhalation of nitrous oxide. Because of the significance of Wells' great contribution to dental and medical science the American Dental Association is planning a centenary celebration which will serve to honor Horace Wells and also acquaint the profession and the public of the important part he played in the discovery of anesthesia. The main celebra-

tion will be held in Hartford on December 11, 1944, the centenary anniversary date of the discov-

Connecticut State Medical Society to share in this celebration and the Council has appointed Dr H G Jarvis, Dr J H Howard, and Dr Barker as the representatives of the Society to serve on the general committee—*Connecticut State M J, July, 1944*



moved with sponge forceps, some foul-smelling placental tissue came with them. Uterus and vagina were packed after the uterus had been wiped with a sponge, and a transfusion was given. Blood pressure the next day was 155/90. The packing was then removed, without recurrence of bleeding.

The patient ran a low-grade fever, with foul lochia, until April 19, 1913, the seventeenth day post-partum, when she had another vaginal hemorrhage. The uterus and vagina were again packed and another transfusion was given. The packing was removed in forty-eight hours. From then on she made an uneventful recovery and was discharged on April 28, with a blood pressure of 120/80.

In the follow-up Toxemia Clinic on June 21, 1913, her blood pressure was 120/80; her urine was normal; her urea clearance was 81 per cent. On November 30, 1913, her blood pressure was 130/80, urine was normal; there was no edema; the abdomen was soft; the uterus was well involuted; the cervix was slightly eroded.

*Final Diagnosis.*—Severe pre-eclampsia with normal blood findings, hypertensive disease complicating pregnancy, twin pregnancy, version and breech extraction, shock, paralytic ileus, post-partum hemorrhage

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MEDICAL PROFESSION IS WORLD'S GREATEST FRATERNITY

The medical profession is the world's greatest fraternity, said Walter B. Cannon, M.D., president

of the American Medical Association, when he addressed the society, he is welcomed by his fellow doctors. In-

our professional interests and the community of our efforts. As a disease itself is no respecter of national or racial differences, so the doctors in their humane service do not respect them. Even in bitter warfare among civilized peoples, wounded enemy captives receive scrupulous surgical care. Though methods of treating injury and disease may differ in different lands, the aim is every where the same—

between nations are recognized. The world-wide uniformities of the phenomena of infections, malnutrition, traumatism, and healing render such barriers absurd. Investigators of these phenomena in various countries publish openly their methods of

recent times have been an awareness that medical

curing them, and a readiness to utilize progressive measures in practical application. While procedures which have been proved good by past experience are respected, new procedures resulting from scientific discoveries are considerably tested for their greater or their novel utility. In short, the medical profession is not tightly bound in tradition, but is free and forward-looking. Steps of unpressive advance have compelled the profession to abandon notions of rigidly fixed patterns of practice, and instead to expect the disclosure of better ways of solving the

urgent problems presented by mankind, disabled, in misery, and faced with premature death. Solutions of these problems may be found in any nation. Because they are urgent and insistent problems, incidental barriers of prejudice or of exclusive nationalism represent folly instead of wisdom.

"Unfortunately there is a difficult natural barrier which, despite the freedom of exchange of medical knowledge, despite the generous fraternity of the medical profession, despite the readiness of the profession to accept and use effective new discoveries, may block the ways which could lead to mutual advantages. This barrier, a marked difference of language, exists between the Soviet Union and the United States. Though many leaders of Soviet medicine can read English medical literature, relatively few are familiar with the Russian medical publications of the English-speaking nations, and little is known of progress in surgery, defect, ing issue

papers from the Russian, survey articles written by American experts on various aspects of Soviet medicine, news of current medical events in the U.S.S.R., reviews of Soviet medical books, and abstracts from Soviet medical periodicals. At a time when the Soviet Union is enduring magnificently and most valiantly the exacting strain of total war, and when exigencies of mobile unique situations, the war medicine.

posses of the society plan Soviet Union to establish an exchange of students and teachers

ship of physicians in the two countries and thereby will help to promote mutual acquaintance and to lessen ignorance and misjudgment among the citizens of two great and powerful nations.—Editorial in J. Med. A. of Georgia, June, 1914



# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman (428 Greenwood Place, Syracuse); George Baehr, M.D., and Charles D. Post, M.D.*

## Four Teaching Days on Poliomyelitis

FOUR teaching days on poliomyelitis were held at the end of August. The first was held at Homer Folks Tuberculosis Hospital in Oneonta on August 23. The program opened at 4:00 p.m.; the meeting was called to order by Dr. Le Roy S. House, president of the Otsego County Medical Society. The chairman of the meeting was Dr. Marjorie F. Murray, regional chairman in pediatrics. The first lecture was "Epidemiology of Poliomyelitis," delivered by Dr. James E. Perkins, Director, Division of Communicable Diseases, State Department of Health, Albany. This was followed by "Clinical Features—Pathology, Diagnosis, and General Treatment," by Dr. James L. Wilson, professor of pediatrics and director of the department of pediatrics, New York University College of Medicine. The program concluded with "Physical Therapy in the Acute and Convalescent Stages," by Dr. Philip M. Stimson, associate professor of clinical pediatrics at Cornell University Medical College. The meeting was under the auspices of the Broome, Chenango, Delaware, Otsego, Sullivan, and Tioga County Medical Societies, the Medical Society of the State of New York, and the New York State Department of Health.

The same program was repeated at a teaching day at Vassar Brothers Hospital in Poughkeepsie on August 30. The meeting was called to order at 8:00 p.m. by Dr. Harry A. LaBurt, president of the Dutchess County Medical Society. The chairman of the meeting was Dr. Donald R. Reed, acting regional chairman in pediatrics. This program was presented by the Dutchess, Orange, Putnam, Rockland, and Westchester County Medical Societies, the Medical Society of the State of New York, and the New York State Department of Health.

A poliomyelitis teaching day was held in the Academy of Medicine in Rochester on the afternoon of August 31.

Dr. Benedict J. Duffy, president of the Medical Society of the County of Monroe, called the meeting to order at 3:00 p.m.; the chairman of the meeting was Dr. Albert D. Kaiser, regional chairman in pediatrics. Dr. Perkins spoke on "Epidemiology of Poliomyelitis." Dr. Douglas P. Arnold, chief of the pediatric service of Buffalo General Hospital, followed with "Clinical Features—Pathology, Diagnosis, and General Treatment." The lecture, "Orthopaedic Measures," by Dr. John C. McCauley, Jr., associate professor of clinical orthopaedic surgery, New York University College of Medicine, closed the program. The teaching day was under the auspices of the Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, and Yates County Medical Societies, the Medical Society of the State of New York, and the New York State Department of Health.

A meeting of the Nassau County Medical Society, at 9:00 p.m. on August 18, at the Meadowbrook Hospital, Hempstead, was given over to postgraduate instruction in poliomyelitis.

The speakers were Dr. James E. Perkins, who discussed epidemiology of poliomyelitis, and Dr. John F. Landon, instructor in pediatrics, Willard Parker Hospital, College of Physicians and Surgeons, Columbia University, who spoke on "Diagnosis and General Treatment of Poliomyelitis."

The program was presented as a cooperative endeavor between the Council Committee on Public Health and Education of the Medical Society of the State of New York and the New York State Department of Health.

## "Penicillin Therapy"

POSTGRADUATE instruction in penicillin therapy was arranged for the Delaware County Medical Society for September 12 at 6:30 p.m. at the Hamden Inn in Hamden. Dr. Paul C. Clark, assistant professor of clinical medicine at

Syracuse University College of Medicine, was the speaker.

This instruction was presented as a cooperative endeavor of the Medical Society of the State of New York and the State Department of Health.

## COMPULSORY PREMARITAL PHYSICAL EXAMINATIONS FOR TUBERCULOSIS

No states require a premarital physical examination for tuberculosis, according to the *Bulletin* of the National Tuberculosis Association. Three states, Washington, North Carolina, and North Dakota, have legislation which prevents persons from marrying who have infectious tuberculosis, and three other states, Delaware, Indiana, and

Pennsylvania, have general laws covering the marriage of persons with a transmissible disease.

Tuberculosis is not specified in these laws, it was stated, but would be covered by the term "transmissible."—*Bull. Federation of State Medical Boards of the United States*

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# *Thirty-Eighth Annual Meetings*

## *of the*

## *District Branches*

## *of the*

# *Medical Society of the State of New York*

### PROGRAMS\*



### Second District Branch

Wednesday, October 25, 1944  
United States Naval Hospital  
Saint Albans, Long Island

#### Morning Session

9:00-11:00 A.M.—Inspection of the hospital in small groups

11:00-12:00 A.M.—Program by members of the medical staff of the hospital

“The Repair of Peripheral Nerves in Naval Casualties”

Lt. Comdr. Thomas I. Hoen

“The Treatment of Meningitis Including the Use of Penicillin”

Comdr. John K. Durkin

“The Treatment of Delayed and Nonunion of Fractures in Naval Casualties”

Capt. Herbert C. Fett

12:30 P.M.—Luncheon

#### Afternoon Session

2:00 P.M.—Business meeting—election of officers

2:15 P.M.—Address by Herbert H. Bauckus, M.D., Buffalo, President of the Medical Society of the State of New York Symposium on Tuberculosis

“The Problem of Rehabilitation of the Tuberculous Patient”

James R. Reuling, M.D., President, Queensboro Tuberculosis and Health Association

“Medical Management of Tuberculosis”

George G. Ornstein, M.D., F.A.C.P., F.A.C.C.P., Associate Professor of Medicine, New York Medical School, and Director of Tuberculosis, Seaview Hospital  
“Modern Concepts of Surgical Management of Pulmonary Tuberculosis”  
Herbert C. Maier, M.D., Sc.D., F.A.C.S., Director of Surgery, Triboro Hospital

#### Woman's Auxiliary

The Woman's Auxiliaries of the four county medical societies on Long Island will attend the luncheon. Nurses and Waves will show them about the hospital in small groups. Bridge in the afternoon.

#### Officers—Second District Branch

President.....Francis G. Riley, M.D., Jamaica  
First Vice-President....John B. D'Albora, M.D., Brooklyn  
Second Vice-President..Everett C. Jessup, M.D., Roslyn  
Secretary-Treasurer....Charles F. McCarty, M.D., Brooklyn

#### Presidents of Component County Societies

Kings.....Leo S. Schwartz, M.D., Brooklyn  
Nassau.....Austin B. Johnson, M.D., Cedarhurst  
Queens.....W. Guernsey Frey, Jr., M.D., Forest Hills  
Suffolk...Frank F. Holmberg, M.D., Sag Harbor

\* The program of the First District Branch Meeting will appear in a later issue.

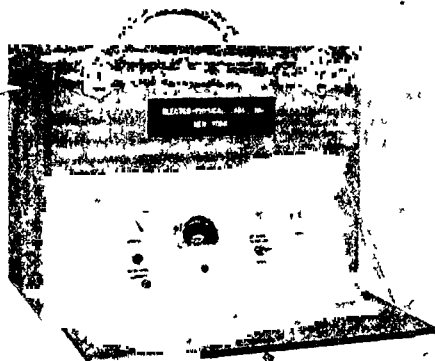


FIGURE A—Photographic Method

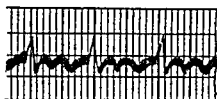


FIGURE B—EPL Method



FIGURE C—Calibration

## New EPL DIRECT-RECORDING ELECTROCARDIOGRAPH\*

An inkless, direct-writing recorder which completely eliminates all photographic procedures and provides instantaneous readings that exactly resemble those of the best string type galvanometers. Because the record is immediately observable, a new field for cardiography in surgical procedure and pharmacological research becomes possible.



*An interesting brochure, detailing the facts about the new EPL Direct recording Electrocardiograph is now available. We shall be happy to send you a copy. The Electro Physical Laboratories, Inc., also manufactures Electro-Encephalographs and Electric Shock Machines. For complete information, address your request to Dept. G-9.*

\*PATENT PENDING



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[Continued from page 2030]

## Fourth District Branch

Tuesday, October 3, 1944

Cumberland Hotel

Plattsburg, New York

## Afternoon Session

3:00 P.M.—“Some Observations on the Control of Tuberculosis in Northern New York”

F. Clark White, M.D., Ray Brook Sanatorium

“Gastric Hemorrhage and Its Treatment”

Clarence J. Tidmarsh, M.D., Professor of Medicine, McGill University, Montreal

Business Meeting—Election of Officers

6:30 P.M.—Dinner

Address by Mr. Rockwell Kent, artist, traveler, and author

Address by Herbert H. Bauckus, M.D., Buffalo, President, Medical Society of the State of New York

Ladies will be entertained by the Clinton County Society during the afternoon and will join the doctors at dinner.

## Officers—Fourth District Branch

President.....Harold A. Peck, M.D.\*

First Vice-President....Frank F. Finney, M.D., Malone

Second Vice-President..Denver M. Vickers, M.D., Cambridge

\*Removed to Chicago.

Secretary.....F. Leslie Sullivan, M.D., Scotia

Treasurer.....G. S. Pesquera, M.D., Mt. McGregor

## Presidents of Component County Societies

Clinton.....Phillip B. Barton, M.D., Plattsburg

Essex.....George L. Knapp, M.D., Ticonderoga

Franklin.....Philip W. Gorman, M.D., Fort Covington

Fulton.....Morris Kennedy, M.D., Gloversville

Montgomery....C. Armstrong Spence, M.D., Amsterdam

St. Lawrence....Foster T. Drury, M.D., Gouverneur

Saratoga.....Mark D. Duby, M.D., Schuylerville

Schenectady....Charles F. Rourke, M.D., Schenectady

Warren.....Burke Diefendorf, M.D., Glens Falls

Washington.....Roy E. Borrowman, M.D., Fort Edward

## RESULTS OF RAGWEED POLLEN COUNT SURVEYS IN NEW YORK STATE—1937-1943

(Reprinted from *Health News*)

Year	Place	County	*Days with Counts Above 25	**Pollen Index	Concentration
1937	Fire Island	Suffolk	12	16.7	Moderately free
	Blue Mountain Lake	Hamilton	1	2.2	Practically free
	McKeever	Herkimer	4	7.6	Moderately free
1938	Wanakona	St. Lawrence	7	10.4	Moderately free
	Lake Placid	Essex	6	13.5	Moderately free
	McKeever	Herkimer	1	2.1	Practically free
1939	Lake Placid	Essex	8	13.3	Moderately free
	Tupper Lake	Franklin	6	8.6	Moderately free
1940	Lake Placid	Essex	2	3.8	Practically free
	Tupper Lake	Franklin	1	2.6	Practically free
	Big Moose	Herkimer	1	1.9	Practically free
1941	Elsmere	Albany	27	49.4	High concentration
	Tupper Lake	Franklin	13	23.7	High concentration
	Big Moose	Herkimer	7	11.8	Moderately free
	Lake Placid	Essex	17	36.8	High concentration
1942	No survey made				
1943	Old Forge	Herkimer	0	0.0	Free
	Loon Lake	Franklin	5	7.0	Moderately free
	Indian Lake	Hamilton	0	1.0	Practically free
	Speculator	Hamilton	0	3.0	Practically free

\* Daily counts above 25 are considered sufficiently high to cause hay fever symptoms.

\*\* A locality with a pollen index of 5 or less is considered a "practically free" area; a locality with a pollen index of 5 to 15 is considered a "moderately free" area.

# Offers Solution of the Tuberculosis Problem . . .

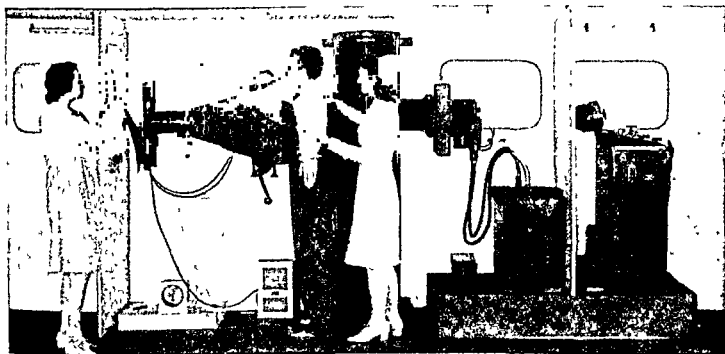
## *Ultimate Victory Over Scourge of the Ages is Foreseen With the Universal Use of Photo-Roentgenography*

In light of statistics which point to a half-million cases of active tuberculosis in the United States, and 60,000 deaths annually from this disease, it is heartening to grasp the significance of the following statement by Surgeon General Thomas Parran, in a paper read before the A.M.A convention in Chicago:

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*gathering momentum, the General Electric X-Ray Corporation has enjoyed the privilege of assisting many organizations in planning and equipping for mass x-ray surveys in both large and small population areas, in hospitals, and in industries.*

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# Medical News

## Hospital Charges for X-Ray, Pathology, Anesthesia, and Physical Therapy

*Following the publication in the September 1, 1944, issue of the JOURNAL of a memorandum on this subject recently submitted to the authorities by the Joint Council of Pathologists, Radiologists, Anesthesiologists, and Physical Therapy Physicians, the JOURNAL here presents for the information of its readers material which went to the authorities from the Bureau of Workmen's Compensation of the Medical Society of the State of New York.*

*In brief, all of this is to show that hospitals may not render medical care; and, second, that hospital functions are circumscribed both under the Corporation Laws and the Workmen's Compensation Law of New York State.*

*A critique of the Court of Appeals' decision in the Sausser case, defining "Roentgenology" as not being of the practice of medicine, will be subsequently published.—Editor*

June 12, 1944

To the Honorable Orrin Judd, Solicitor General  
Capitol  
Albany, New York

I am enclosing, as per my promise, a memorandum which we wrote back in 1937 concerning the rights of hospitals to charge for services rendered by physicians on their staffs. I believe the argument is even more valid today in view of the specific amendments to the *Workmen's Compensation Law*, operative June 1, 1944, which were discussed at the meeting last week before Commissioner Corsi of the Labor Department, which you attended.

May I further call your attention to Section 13-c(2), effective June 1, 1944, which states:

"No claim for services in connection with x-ray examination, diagnosis, and treatment of any claim shall be valid or enforceable except by a physician duly authorized as a roentgenologist by the Industrial Commissioner for services performed by such physician or under his immediate supervision."

May I further call your attention to Section 13-d of the *Workmen's Compensation Law*, which, after defining the reasons for the removal of a physician from the panel of physicians authorized to treat compensation claimants, specifically, in paragraph (g), exempts the x-ray specialist from the penalty provided for rebating or fee-splitting by the following statement:

"Except reasonable payment not exceeding 33 1/3 per cent of any fee received under this chapter for x-ray examination, diagnosis, or treatment may be made by a physician duly authorized as a roentgenologist to any hospital furnishing facilities for such examination, diagnosis, or treatment."

Section 13-f, as amended in 1935, was not disturbed by the recent amendments. This section states:

"Fees for medical services shall be payable only to a physician or other lawfully qualified person permitted by Section 13-b of this chapter to render medical care under this chapter or to the agent or to the executor or administrator of the estate of such physician. . . . Hospitals shall not be entitled to receive the remuneration paid to

physicians on their staff for medical and surgical services."

Section 13-b(3) provides that laboratories and bureaus engaged in x-ray diagnosis or treatment, etc., which participated in the diagnosis or treatment of injured workmen under this chapter, shall be operated or supervised by *qualified physicians* duly authorized under this chapter and shall be subject to the provisions of 13-c of this chapter. Section 13-c refers to the licensing of such laboratories and bureaus.

Rule No. 17 of the Rules and Regulations promulgated by the Industrial Commissioner covering Chapters 258 and 930 of the laws of 1935 amending the *Workmen's Compensation Law* provides:

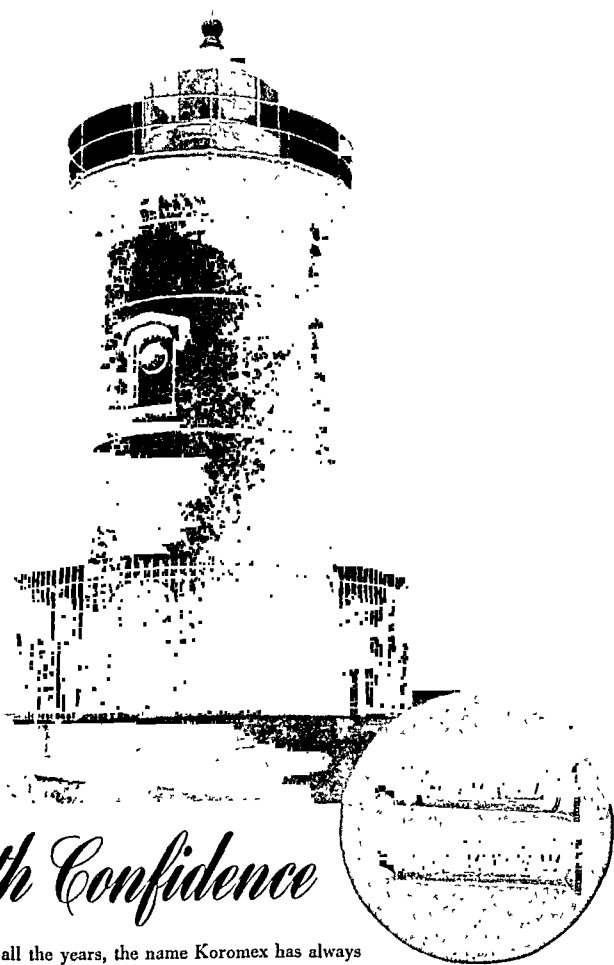
"Hospitals and Dispensaries shall not operate a medical bureau or clinic for the purpose of rendering medical care and treatment to compensation cases. . . . Hospitals and dispensaries shall not render medical care and treatment to ambulatory compensation cases except for the emergency treatment."

All this to show that the hospitals may not render medical care and that their functions are circumscribed both under the corporation laws and the *Workmen's Compensation Law* of this State.

May I draw your attention to a decision by Mr. Justice McLaughlin, which was published in the *New York Law Journal* on Saturday, June 13, 1936, in the case of *Posner v. Israel*. These two physicians had formed a partnership to engage in the solicitation business and dividing the fees at a time when it was not illegal to carry on these practices although it was unethical. Their activities were confined to workmen's compensation cases. On July 1, 1935, the *Workmen's Compensation Law* was amended, forbidding splitting any fees received for treating injured employees. Justice McLaughlin held that since that law went into effect (July 1, 1935) the partnership became illegal. The prayer of the plaintiff to dissolve it on that ground was granted. An interlocutory judgment of dissolution was granted.

If in accordance with the terms of the amended *Workmen's Compensation Law*, a physician has entered into a contract with a hospital to provide x-ray services on a full-time salary basis, and if after June 1, 1944, such contract includes the acceptance of a salary and the turning over of all fees for x-ray

[Continued on page 2036]



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[Continued from page 2034]

examinations made to the hospital, it would seem that such contract is null and void and contrary to the purpose of the amended *Workmen's Compensation Law*\* as defined in the various sections mentioned above.

DAVID J. KALISKI, M.D., *Director*

February 5, 1937

To the Industrial Commissioner:

You have very kindly referred to me a brief submitted by the voluntary hospitals of the City of New York to the Attorney General protesting against your construction of Section 13-f of the amended *Workmen's Compensation Law*.

It is the contention of the voluntary hospitals of the City of New York that Rule 22 promulgated by the Industrial Commissioner is an erroneous construction of the language of Section 13-f of Chapter 258 and

"that it has the effect of depriving the hospitals of their legal right to charge for special services in compensation cases, as they do in all other types of cases, except where indigent patients are involved, and that the rule in question will cause them substantial damage."

Section 13-f states—

"Fees for medical services shall be payable only to a physician or other lawfully qualified person permitted by Section 13-b of this chapter to render medical care under this chapter. . . . Hospitals shall not be entitled to receive the remuneration paid to physicians on their staff for medical and surgical services."

The hospitals contend that "the proper, as well as the literal, construction of this provision excludes all services other than *medical and surgical*." Roentgenology is an integral part of medicine and surgery and in its fullest and completest sense means a special service rendered by an especially qualified physician. As in other branches of medicine, certain phases of this work may be rendered by trained technicians, just as in medicine and surgery nursing and other technical or nonmedical help is often essential, but, actually, x-ray service is a part of medical service and not a special service in the sense that it can be provided by the hospital without the intervention of a properly qualified physician. The same is true of other laboratory services, especially pathology, anesthesia, and physiotherapy. All of these require special training on the part of a physician and in the strict sense of the word are a part of medical service. These services are available in a hospital, but are at the command of the physicians of the hospital, who are the only persons qualified and licensed to utilize them. A roentgenologist is personally responsible (legally) for his acts and is himself liable rather than the institution by which he is employed.

The hospitals maintain that this special service is impersonal and does not involve a direct relationship of doctor and patient. This is not a valid argument and is indeed not a fact. In order that an injured claimant may be properly cared for, it is necessary in many instances that the roentgenologist establish

a direct relationship with the patient and his attending physician and perhaps review the records of the case in order to arrive at a correct diagnosis and when necessary render the proper treatment, if treatment by radiation therapy is required. It is often necessary for the x-ray specialist to testify as to the facts in the case before the referee. He must testify as a licensed physician especially qualified in x-ray diagnosis and/or treatment. That the hospitals have relegated to themselves the right to utilize x-ray and laboratory service as a means of revenue to the hospital in no sense disturbs the argument that it is a medical service and not comparable to the ordinary hospital care.

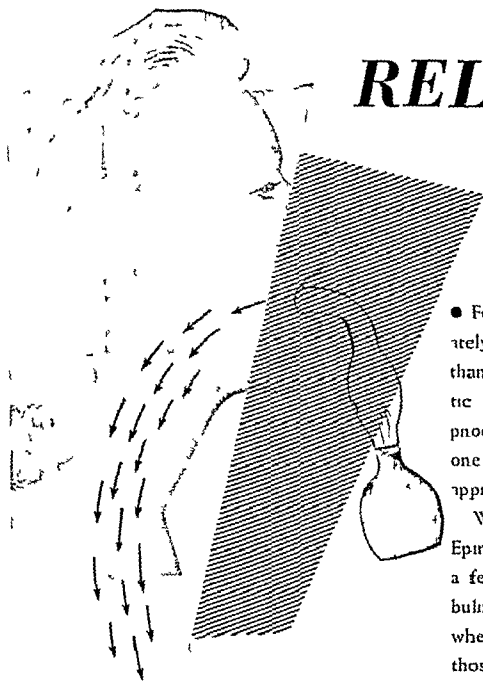
It was not the intention of the framers of the amended *Workmen's Compensation Act* to permit the hospitals by direction or indirection to practice medicine. It was clearly intended that only a licensed physician should be permitted to practice medicine; and a licensed physician on the duly constituted staff of a voluntary hospital was exempted from certain provisions of the *Workmen's Compensation Act* in respect to registration in order to make it possible for him to render service to injured workmen who might be hospitalized because of the severity of their injuries.

That hospitals should not be entitled to receive remuneration paid or payable to physicians for medical and surgical service was clearly indicated in Section 13-f of Chapter 258. The argument that city hospitals are entitled to recover from an employer for medical service does not support the contention of the hospitals that a hospital may render such medical and surgical service *per se*. It is only because of certain restrictive and prohibitory clauses in the New York City Charter that hospitals have assumed the right to collect for services rendered by physicians and for which only physicians should be compensated. It may be pointed out here that these prohibitory clauses have been removed from the new Charter of the City of New York specifically for workmen's compensation cases. It is also contemplated that the Municipal Assembly will take steps to pass legislation to remove this prohibition against a physician in the city hospitals being compensated so that physicians may be paid during the period between now and January 1, 1938, when the new Charter goes into effect. This is an irrefutable argument, in which the municipal hospitals agree that hospitals are not entitled to payment for medical services. The purpose of restricting municipal hospitals to emergency care only was not with the idea of overcoming the prohibition against the payment of physicians, but a realization of the fact that workmen's compensation claimants are not public charges and should be treated as semi-private or private patients in accordance with their social and economic status.

In their argument the voluntary hospitals state that prior to the amendment of the *Workmen's Compensation Law* in 1935, "Regulations of the care of injured employees in and outside of hospitals had fallen into a state of confusion and various undesirable practices had resulted. There was need of precise and remedial provisions." This argument is valid. It was necessary that the injured claimant should be able to call upon those who had participated in the diagnosis and treatment of his injuries for medical testimony in establishing his claim before the Department of Labor. It was obvious that competent testimony was necessary and only a duly qualified physician, either in

\* Section 1264 of the *Education Law* similarly amended, effective April 4, 1944.

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[Continued from page 2036]

the hospital or outside the hospital, could render proper testimony. The hospital as an impersonal being is in no position to act in this capacity; therefore legislation was necessary to restrict the scope of activity of the hospital to bed and board care, and to provide for the attending medical staff those adjuvant services that are necessary in the care of the sick and injured. They are a part of the physician's armamentarium; among them x-ray service may be mentioned. The hospital provides the apparatus, certain technical help, and other services. But in the last analysis the physician controls and animates the services and renders the diagnostic and therapeutic help. It is he who is to be compensated for the service rendered. The fact that the physician is hired on a salary basis in no wise alters the validity of this argument. In some instances he renders the service gratis, as do other physicians and surgeons connected with the institution. In some instances he is paid an honorarium, and in others a salary, either for full- or part-time services. That adequate arrangements are possible to remunerate and reimburse the hospital for its overhead in supplying the roentgenologist with apparatus, material, and technical service goes without saying. This is entirely feasible and a means has been suggested for bringing it about.

Rule 22, to which the voluntary hospitals object, states—

"Hospitals shall render bills for board and room accommodations, medical and surgical supplies, nursing facilities, and routine laboratory service. Bills for all services rendered by physicians in hospitals, including physiotherapy, x-ray, pathology, anesthesia, medical and surgical care, etc., shall be made out separately and paid directly to the doctor rendering the service. Proper reimbursement by the physician to the hospital for materials and the use of facilities will not be in violation of Section 13-d-2(e)."

Under point 3, the hospitals state—

"To support a claim that a radical change in established custom, which is to apply only to compensation cases, was intended by the Legislature in enacting Section 13-f very cogent reasons indeed would have to appear. Not only are such reasons lacking, but, as we shall point out, every consideration of practicability and fairness negatives such a claim."

They then go on to point out that—

"Private philanthropy has provided the means for the purchase and installation of expensive x-ray, laboratory, physiotherapy, and other equipment. . . ."

and then state that—

"As a result of experience, and with the co-operation of the specialists themselves, the sound custom was long since evolved by which the hospitals charged for these special services, compensating the physicians employed therein on a salary or commission basis. This method, assuring continuity and availability of service and efficient control and management of these important departments, is necessitated by the nature of the services and the complicated setup of the departments."

They further state that—

"Under these circumstances the hospitals themselves have every right to determine what shall

be the cost for the use of its equipment and the method of charging and billing for the services it makes possible. Rule 22 even denies to the hospital the right to bill for the use of its own facilities in this connection."

It may be pointed out here that the present methods employed by hospitals for the determination of cost of such service are entirely unsatisfactory and based upon inadequate and improper methods of cost accounting and bookkeeping. The hospitals are only now attempting to determine and set up a satisfactory method of cost accounting and bookkeeping to apply to all institutions so that the real cost of hospital service in its various aspects may be determined.

The allocation back to the hospital of a reasonable amount to cover the cost of service rendered to roentgenologists, anesthetists, physiotherapists, and other physicians employed by the hospitals or giving services gratuitously could easily be agreed upon and with as much assurance of properly compensating the hospitals as the present methods. Beyond this hospitals should not go. They are not, as corporate bodies, allowed to practice medicine and should not be permitted to exploit physicians. All profits over and above the cost of the service should accrue to physicians (x-ray) treating workmen's compensation cases. The medical societies have urged a reasonable method to compensate the hospitals ever since the inception of the new law. The great bar to the adoption has been the difficulty of the hospitals in arriving at their own figures. This should not be brought up as an argument to invalidate the right of the physician to be paid for his services under the provisions of the *Workmen's Compensation Act*.

In 1933 a committee was appointed by Governor Lehman to study and report on the medical aspects of the *Workmen's Compensation Law*. In its report this committee stated that there were abuses over which the medical profession had no control. Among these abuses attention is called to Item 2—

"Reduced charges by hospitals in order to obtain business."

"Hospitals which accept compensation cases at a per diem charge, which is less than the actual cost of hospitalization, meet the losses by diverting funds which have been given for philanthropic purposes."

While this charge cannot be sustained against the majority of voluntary institutions, it is undoubtedly true that certain hospitals do compete against each other for workmen's compensation cases. They are willing to accept them at preferential rates below the actual cost of maintenance of even a so-called ward bed. The hospitals have not been able to agree among themselves on a uniform per diem rate for compensation cases. The charges vary all the way from \$4.50 to \$6.50 per day. The difference is often made up by charging for so-called extras, such as dressings, medicines, laboratory and x-ray service. A physician may be employed part-time or full-time on a salary or commission basis. Any profit that may result in laboratory or x-ray service accrues to the hospital. Another abuse that arises where the physician (roentgenologist) is merely an employee and not directly responsible and paid by the carrier or employer for the service is the difficulty of obtaining adequate medical testimony by the x-ray or laboratory expert for the claimant or the carrier at the time of a hearing before the Depart-

[Continued on page 2040]

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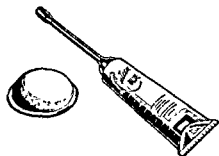
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(Continued from page 2040)

are available from "a large number of men between 18 and 28 years of age found physically disqualified . . . women; soldiers, discharged from the Army; and men over 30 years of age," the Council points out that these possible sources were taken into consideration in the estimates of reduced enrolments submitted by the deans. The Council says: "It is extremely doubtful whether qualified students in these categories are available in significant numbers at present unless admission standards are drastically reduced . . . While every favorable consideration should and will be given to medical school applications from veterans, it would serve neither the veterans nor the public to admit to medical schools men who do not possess the requisite physical, emotional, mental, and other qualifications.

### Industrial Medical Service for Federal Employees

A BILL to provide industrial medical services for all Federal employees, the current total of whom is about 2,700,000, has been endorsed by officials of the Federal government and a representative of the American Medical Association at hearings before the House District Committee.

Surgeon General Thomas Parran said that the services contemplated would include a good pre-placement examination, including a chest x-ray for tuberculosis, minor medical and dental care, minor care for emotional disturbances, a nutritional effort, checks on environmental factors, such as bad lighting, which causes headaches; studies of records of absenteeism, control of contagion and infection, and some routine care in pregnancy. The program, he estimated, would cost less than 1 per cent per day per public employe.

This plan, Dr. Parran continued, would be administered by the Civil Service Commission in consultation with the United States Public Health Service and in close cooperation with agency heads and personnel services. Further, it "is not socialized medicine," he emphasized, but, on the contrary, would be of benefit to the private physician by relieving him of caring for minor illnesses and referring to him such persons as properly need his help.

Dr. Carl Peterson, secretary of the Council on Industrial Health of the American Medical Association,

"It will not meet the problem of obtaining students from these groups 'to offer them the inducement necessary to study medicine.' Students are impelled to study medicine through a long and complicated series of circumstances involving their whole past education, drives, capacities, emotional and social experiences, and not by offering special inducements [as suggested by General Hershey]."

As for the taking of additional students from those who have spent two years in active service, as was suggested to the Army and the Navy and rejected by them, the Council says that such a plan probably would have resulted in many men being returned from the widespread theaters of military operations and even from this country who would not possess the qualifications for the study of medicine.

said his group would actively support legislation of this description if it followed reasonably well a set of standards for such services as would center around an industrial physician, with reliance being placed on the industrial nurse under medical supervision. Also, he said, it should provide industrial hygiene consultation and include disabilities under employment compensation laws.

Close connection with medical services of the community should be maintained, Dr. Peterson held, along with emphasis on preventive technics. The proposed service, he said, should be founded on good records which reflect the population it serves and the administrative personnel should be adequately paid.

Paul V. McNutt, chairman of the War Manpower Commission, said that the Federal government has taken the lead in recommending industrial health services to industry, but has failed to practice what it preaches, with only "the rudiments of a health service" for its own employees.

Arthur S. Flemming, Civil Service Commissioner, said that government employes lost seven sick days each last year.

The common cold, Dr. Parran said, was the principal single cause of absenteeism. He named next in order "the terrific load many married women are carrying" with a heavy job to do at home as well as at the office.

### Council on Physical Therapy Becomes Council on Physical Medicine

AT THE nineteenth annual meeting of the Council on Physical Therapy during December, 1943, a motion was passed unanimously recommending to the Board of Trustees that the name be changed to the Council on Physical Medicine. At the recent annual session of the American Medical Association in Chicago the Board of Trustees recommended to the House of Delegates, and the House of Delegates acted favorably on this recommendation; as a result, the Council on Physical Therapy has now become the Council on Physical Medicine.

The designation "physical medicine" is a more inclusive term. Physical agents are used not only for therapy but also for diagnosis. Hospital departments of physical medicine, when they employ electric tests for reaction of degeneration or perform such tests as the cold pressor test, are employing physical agents not for therapy but for diagnosis.

The Council has for some time interested itself in certain phases of occupational therapy, which is a

branch of the broad field of physical medicine. The Council was informed that the American Occupational Therapy Association was anxious to have the Council give more attention to occupational therapy. Discussions between representatives of the Council and the American Occupational Therapy Association indicated that the association would welcome the inclusion of occupational therapy under a Council on Physical Medicine.

Under the following definition for physical medicine, the entire field can be covered by a Council on Physical Medicine: Physical medicine includes the employment of the physical and other effective properties of light, heat, cold, water, electricity, massage, manipulation, exercise, and mechanical devices for physical and occupational therapy in the diagnosis and treatment of disease. The Council believed that it would be wise to appoint a special subcommittee of five physicians interested

(Continued on page 2044)

# in the therapeutic sciences

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843 Flatbush Ave.  
HEMPSTEAD, L. I., 241 Fulton Ave. HACKENSACK, 299 Main St.



[Continued from page 2042]

in occupational therapy who could help to bring this phase of therapy more fully under direct medical supervision.

Finally, there is definite precedent for the use of the term "physical medicine," which has long been considered the most acceptable term by our British colleagues. The Conjoint Board of the

Royal College of Physicians and the Royal College of Surgeons has just instituted a diploma in physical medicine.

With its new name the Council on Physical Medicine will continue to function as it has always functioned but will devote additional attention to problems of occupational therapy.—*Editorial, J.A.M.A., July 29, 1944*

## County News

### Albany County

Dr. A. M. Chapnick, of Wynantskill, honorably discharged recently from the Army Medical Corps after sixteen months' service, has been appointed assistant in psychiatry and neurology at Albany Hospital and Albany Medical College.

Dr. Chapnick, a graduate of the University of Chicago and the University of London, is town health officer for the Town of North Greenbush, a psychiatrist at the Induction Center in Albany, and physician for District Medical Advisory Board 43 of Selective Service, which covers several upstate counties.\*

### Bronx County

The Bronx County Medical Society is now located at 400 East Fordham Road, Room 620, Bronx 58.

The following physicians are at present holding office in the county society: president, Moses H. Krakow, M.D., 1749 Grand Concourse, Bronx 53; secretary, Goodlatte B. Gilmore, M.D., 2940 Grand Concourse, Bronx 58; treasurer, Joseph A. Landy, M.D., 900 Grand Concourse, Bronx 56.

A testimonial dinner was held recently at the Schnorer Club to honor Dr. William K. Kahrs on the occasion of his fiftieth year in the practice of medicine.

The dinner, arranged by the Pediatric Society, was attended by more than fifty physician friends. Dr. Harry Cohen presided, Dr. Forris Chick was toastmaster, and Dr. Jacob Golomb made the gift presentation. It was a delightful social evening, perhaps because it was so entirely different from the conventional. The speakers, Dr. Nathan B. Van Etten and Dr. Kahrs himself, took those present back fifty years by describing the Bronx when it was a horse-and-buggy village of farms, with limited transportation and limited living conveniences.

Dr. Kahrs was born in New York City on February 5, 1872, but he has been a resident of the Bronx since 1884. In 1894, upon his graduation from Bellevue Medical College, he interned at Fordham Hospital, then the first City Hospital in the Borough, which had opened its doors but two years before. Dr. Kahrs was one of the organizers of Union Hospital, serving as visiting physician on its staff and as a member of its Board of Trustees. During World War I, just about the time that he commenced to devote his practice to internal medicine, he served on the local draft board. He served on the induction board during this war and he continues his interest in Union Hospital as consultant physician and member of its Board of Trustees.

Dr. Kahrs is a charter member of the Bronx County Medical Society.

### Broome County

A citation for distinguished service has been awarded to Dr. Charles R. Seymour of Binghamton by the Alumni Association of Albany Medical College and will be presented to him at an association meeting on September 16 in Albany.

A letter announcing award of the citation declared it was given because of the "more than half century of meritorious service in the cause of humanity that you have given."

A graduate of Albany Medical School in 1892, Dr. Seymour has practiced in Binghamton for more than fifty years.

Twice a president of the Broome County Medical Society, Dr. Seymour was a member of the first staff of Binghamton City Hospital.\*

### Cayuga County

Dr. George B. Adams has resigned as director of the Cayuga County Laboratory, after fourteen years' service, to become director of the laboratory in a 450-bed hospital in Winston-Salem, North Carolina.\*

### Columbia County

Dr. Lewis Gregory Cole, head of the x-ray department of the Hudson City Hospital, recently was given one of the outstanding awards of his profession when the American Gastroenterological Association selected him as the recipient of the Friedenwald Medal. The medal will be presented to Dr. Cole at the next annual banquet of the association at its meeting in the East. Dr. Cole resides in White Plains.\*

### Dutchess County

Dr. Edith Gardner Mead, member of the Poughkeepsie Board of Health, has been appointed full-time medical supervisor of the Poughkeepsie school system to succeed Dr. Helen L. Palliser, whose resignation will become effective on October 1.

Dr. W. W. Wicks, of Pine Plains, was appointed township health officer at the monthly meeting of the town board in July. He will succeed Dr. Ellwood Oliver, who died on July 6.

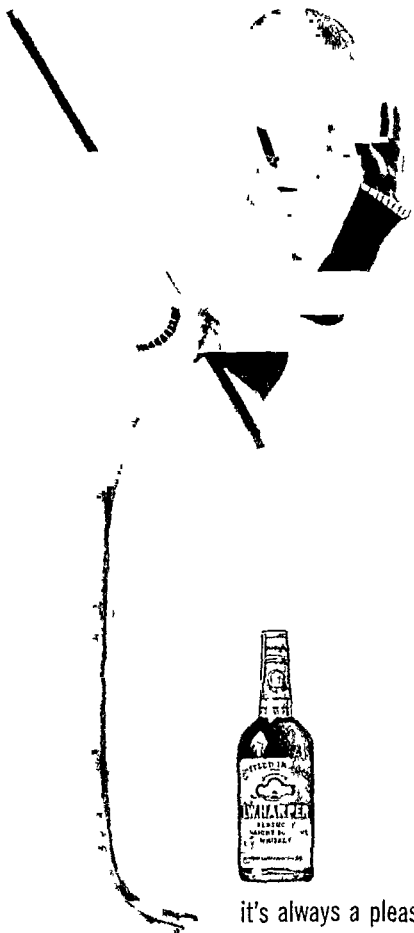
Dr. Wicks has been a practicing physician in Pine Plains for the past sixteen years. He was born in Scotland, South Dakota, where he received his elementary education. He served as a private during the first World War, and later earned his A.B. at Yale and M.D. at Harvard. He served his internship at the Albany Hospital.\*

### Erie County

The county medical society has organized an emergency physicians' service bureau and a con-

\* Asterisk indicates that item is from a local newspaper.

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[Continued from page 2044]

sulting board to provide immediate medical assistance to children showing signs of infantile paralysis.

If the family physician is not available, parents may call the bureau and a doctor will be sent at once. Dr. John W. Kohl, chairman of the society's Public Health Committee, said when the bureau was organized on July 18. General practitioners and specialists were named to the consulting board.\*

The regular meetings of the county society will be resumed on October 24.

#### Essex County

At a meeting of the Medical Society of the County of Essex recently, a motion was adopted to give support to the Essex County Veterans Organization in their efforts to secure a full-time, paid service officer for Essex County, it has been announced by Dr. James E. Glavin, of Port Henry, secretary.

It was further decided that any connected service case should not be considered a welfare problem, but that veterans should be entitled to full and complete care by a veterans' organization.

A committee consisting of Dr. John Miller, of Crown Point, and Dr. Glavin was appointed to work with the American Legion in all matters pertaining to veterans.

The Legion has petitioned the Essex County Board of Supervisors to create the service-officer post in the county and the Board now has the matter under consideration.\*

#### Madison County

The annual midsummer meeting of the county society was held at Sylvan Beach, New York, on Thursday, August 10.

A chicken and frog-legs dinner was served to members and guests of the society at Ron-Nell's Restaurant, Scot-Noose Park, Sylvan Beach, at 6:30 P.M.

The scientific program was held at the camp of Dr. Howard Beach, at 8:00 P.M. Dr. Paul C. Clark, assistant professor of clinical medicine, Syracuse University College of Medicine, presented a paper on "Penicillin." This paper was given under the auspices and direction of the Council Committee on Public Health and Education of the Medical Society of the State of New York. Dr. Arthur S. Broga showed motion pictures.

#### Monroe County

Dr. Isadore Hurwitz, Rochester physician, returned home on July 19 from an Army hospital in Denver after serving two years as a captain in the Army Medical Corps. He served for eight months in the South Pacific.

Dr. Hurwitz was hospitalized in this country last April as a result of a medical disability suffered overseas. He is resuming his medical practice in Rochester.\*

Penfield now has a resident physician, Dr. Ellsworth S. Deuel.\*

#### Nassau County

Dr. Eugene H. Coon, vice-president of the Nassau County Medical Society, called a special meeting for the purpose of discussing diagnosis, treatment, and care of poliomyelitis cases. The

meeting was held at the Meadowbrook Hospital, August 18, at 9:00 P.M.

The speakers were Dr. James E. Perkins, director of communicable diseases of the State Health Department; Dr. John F. Landon, instructor of pediatrics at the Willard Parker Hospital, College of Physicians and Surgeons; and Dr. O. Ho C. Hudson, of the Meadowbrook Hospital.\*

#### New York County

At its meeting on Tuesday, June 20, the New York Psychoanalytic Society and Institute elected the following officers: president, Leonard Blumgart, M.D.; vice-president, Sandor Lorand, M.D.; secretary, Henry A. Bunker, M.D.; and treasurer, Z. Rita Parker, M.D.

The New York Academy of Medicine has set up plans for a continuous noncommercial drug exhibit at its headquarters. The exhibit will be in charge of a physicians' committee on drug exhibits which will work with an advisory committee of drug manufacturers. Dr. Theodore G. Klumpp, president of Winthrop Chemical Company, Rensselaer, is a chairman of the advisory committee. A person will be in charge of the exhibit who will be able to answer questions and explain new drugs, and pamphlets and literature will be furnished, giving the research and clinical usage and describing the products.

Because of the extreme importance of exact diagnosis in tropical diseases, the New York City Department of Health has expanded its facilities in order to furnish every possible aid to practicing physicians and hospitals throughout the city. This service is being conducted in cooperation with the tropical disease staff of the DeLamar Institute of Public Health of Columbia University.

**Laboratory Service:** The Tropical Disease Laboratory located at the Washington Heights Health Center, 600 West 168th Street, is now on a full-time basis. Services offered by the laboratory include examination of blood, feces, urine, etc., for parasites and for reactions associated with the presence of parasitic and other tropical diseases, as well as intradermal tests for trichinosis, echinococcus disease, and brucellosis. Specimens may be sent to this laboratory from 9:00 A.M. to 4:30 P.M. daily. Reports will be forwarded to the referring physician.

**Diagnostic Service:** Patients may be sent to the clinic at the laboratory for examinations. Upon completion of these, a report including the diagnosis and suggestions for treatment will be forwarded to the referring physician.

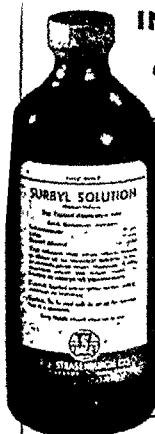
**Consultation Service:** Whenever necessary, bedside consultations will be provided.

The laboratory staff includes a specially trained technician, expert in parasitology; in addition, a large group of the regular laboratory staff of the Department of Health have been trained for this type of work should the need arise. The Department has appointed an epidemiologist in tropical diseases, Dr. Howard B. Shookhoff, a Diplomate of the American Board of Internal Medicine and of the Conjoint Board of England in Tropical Medicine and Hygiene, as well as a Fellow of the Royal Society of Tropical Medicine and Hygiene. Dr.

[Continued on page 2048]

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[Continued from page 2046]

Shookhoff has had field experience in Puerto Rico and in Colombia, South America.

Referring physicians should telephone the Tropical Disease Diagnostic Service at Wadsworth 7-6300, Extension 18, so that necessary instructions for obtaining specimens may be given or appointments made for consultation.

President Allen Wardwell of the Association of the Bar of New York City has appointed the following committee on Medical Jurisprudence for the year 1944-45: John Kirkland Clark, *chairman*; Rogers H. Bacon, Eli H. Bronstein, Lawrence Ebstein, Julius Hallheimer, Edward Holloway, Sidney Jarcho, James D. C. Murray, Abraham Schwartz, James W. Scott, and George H. Sibley.

Dr. Kenneth B. Turner has been named head of the Records Section of the Committee on Medical Research of the American Medical Association.

Direct affiliation of the Fourth Medical and Surgical divisions of Bellevue Hospital with the College of Medicine of New York University was announced on July 15 by Dr. Harry Woodburn Chase, chancellor of the university, and Edward M. Bernecker, Commissioner of Hospitals for New York City, in a joint statement.

According to the announcement, the affiliation will "offer further opportunities for clinical teaching in the College of Medicine in addition to the present teaching services in the third (New York University) division of the hospital."

"New York University greatly appreciates the long and generous co-operation of the city authorities with its medical school," Chancellor Chase said. "This is a significant step in forwarding the effectiveness of our work as well as that of the hospital."

Dr. Charles H. Nammack and Dr. Arthur S. McQuillen, directors of the fourth division, have been appointed to the faculty of medicine of the university.\*

#### Oneida County

Medical aims of the present and postwar period as visualized by Dr. Herbert H. Bauckus, Buffalo, president of the Medical Society of the State of New York, were stressed by him on July 11 at the quarterly meeting of the county society held in Utica.

Dr. Bauckus made a plea for greater cancer control, greater expenditure of funds for the care of the insane, and more money for the complete elimination of tuberculosis.

The importance of the care of the "indigent through sickness" was emphasized by Dr. Bauckus. He referred to those gainfully employed who, when illness attacked them, had insufficient financial reserve until the time of their reemployment. He said they should receive the same benefits of medical care as those whose reserve is sufficient.

He emphasized the great help the group or non-profit hospital and medical plans have accomplished and complimented the local plans. Dr. Bauckus also discussed the extreme importance of care for returning war veterans.\*

#### Onondaga County

Dr. Herman G. Weiskotten, of Syracuse, was

reappointed to the Public Health Council on July 25 by Governor Thomas E. Dewey. The term of office of Council members is six years.

Dr. Weiskotten has been a member of the Council since 1936. He is dean of the College of Medicine of Syracuse University and has had wide experience in public health as well as in medical education.

A three-week training institute in health teaching to assist school administrators and teachers in carrying out the program set forth in the new State syllabus was given at Syracuse University August 14 to September 2. The university's department of physical education cooperated with the State Education Department in presenting the course.

The institute was under the leadership of Dr. John H. Shaw, president of the New York State Council on Health Teaching and assistant professor of physical education at Syracuse University.

Members who participated in development of the new syllabus and who assisted Dr. Shaw were Miss May Barnard, representative of the State School Nurse Teachers' Association on the Regents' advisory council; Miss Mary Bowen, supervisor of health teaching in the department of education, Syracuse; Miss Florence C. O'Neill and Miss Mary Rappaport, health-teaching supervisors, State Education Department; Miss Frances Van Arsdale, director of health, Binghamton, Dr. John E. Burke, assistant superintendent of schools in Schenectady and representative of the State Association of School Physicians on the Regents' advisory council; Dr. Charles McNeely, representative of the State Dental Society on the council; Dr. O. W. H. Mitchell, Syracuse University, representative of the State Medical Society on the council, and Dr. James Perkins, director of the division of communicable diseases, State Department of Health.\*

#### Ontario County

Two faculty members, Dr. Nathan P. Sears and Dr. Francis R. Irving, of the Syracuse University College of Medicine, addressed the quarterly meeting of the county society held on July 24 at the Geneva Country Club. Dr. Sears spoke on the subject "Gynecology in General Practice" and Dr. Irving discussed "Caudal Anesthesia in Obstetrics." The latter talk was illustrated with moving pictures.

Dr. J. Wendell Howard, of East Bloomfield, county society president, conducted the meeting, which was followed by a dinner at 6:30 o'clock.\*

Middlesex paid tribute to Dr. F. M. Chaffee for his forty years of medical service, at a banquet held in the Town Hall on August 1.

The banquet was attended by men and boys, many of whom were delivered as babies by the guest of honor.

Dr. Chaffee began his practice in Middlesex in the horse-and-buggy days and has answered calls night and day ever since except for the period of his service in the United States Army during World War I.

It is estimated that he has delivered over 5,000 babies in that time.

The speaker at the banquet was the Rev. Samuel G. Houghton, D.D., who began his ministry in the same town and at the same time that Dr. Chaffee began the practice of medicine.\*

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[Continued from page 2048]

After combining the work of school physician with his regular practice for the past thirty years, Dr. James S. Allen, Geneva physician, is giving up the latter for the full-time school job this fall.

Dr. Allen began his medical practice in Geneva in 1910. He was graduated from Syracuse University Medical School in 1908.

During the first World War Dr. Allen spent two years in the Army Medical Corps, with the rank of lieutenant colonel. The following year he taught preventive medicine at Cornell University under Dr. Haven Emerson of New York City. Dr. Allen is president of Geneva's Board of Health and has been active as a member of the Geneva General Hospital staff, as well as in medical associations and groups in Ontario County and the State.\*

#### Oswego County

Dr. Abraham Ruhbarger, who was interned in Italy until being freed by the Allies, is giving his services for the care of the refugees from occupied Europe quartered at the emergency shelter at Fort Ontario, Oswego.\*

#### Queens County

Dr. Howard W. Neail, Jamaica, former coroner's physician and an assistant medical examiner of New York City for thirty-four years, during which time he performed 12,000 postmortem examinations and testified as a physician-detective at many important murder trials, has retired from public service.

Dr. Neail was a member of the first class graduated from Jamaica High School. He studied medicine at George Washington University.

Some of the well-known cases on which he worked were the Snyder-Gray case, the Major Green case, and the Jamaica "tobacco-road" case.\*

#### Schenectady County

Lt. Comdr. Quenton Jones has been assigned to the Schenectady blood donor center as a Navy doctor, it has been announced by Richard P. Davis, chairman of the center. Commander Jones, who has been connected with centers in New York and Pittsburgh, succeeds Lt. (j.g.) John Flynn, who has been assigned to other duty.

Commander Jones, whose home is in Utica, spent ten months on a destroyer in the Atlantic and saw action with the marines in the Pacific.\*

#### Suffolk County

The county society and its woman's auxiliary met July 27 for dinner and separate business meetings in the Shoreham in Sayville.\*

. . .

The new assistant director of Newark State School is Dr. Jacob Cohen, who was appointed to the position August 1, it is announced by Dr. H. G. Hubbell, acting director.

Dr. Hubbell, who has for many years served as assistant director (superintendent), has been acting director since the death of Dr. E. A. Witzel on May 15.

Dr. Cohen is a native of Montreal, and received his education in Montreal High School and McGill University, from which he was graduated in 1925 with the degree of M.D. The same year he entered service in the New York Department of Mental Hygiene as medical intern at King's Park State Hospital.

He was appointed assistant physician at Central Islip State Hospital in 1930 and served there successively as senior assistant and acting clinical director.

The new assistant director is a member of the New York State and Suffolk County medical societies, the American Psychiatric Association, and is president of the Long Island Psychiatric Society. He has also been active in the Suffolk County Council of the Boy Scouts.\*

#### Warren County

Dr. Edwin B. Jenks, of Diamond Point, Lake George, has been appointed chief of the Emergency Medical Unit in the Town of Bolton by Mark C. Doyle, director of the Warren County Office of Civilian Protection.\*

#### Wayne County

The Wayne County Medical Society honored its president and three other "country doctors" who have been active in their profession for the past fifty years, at a dinner meeting held on August 8 at Newark Country Club.

The four were Dr. Ralph Sheldon, of Lyons, society president; Dr. Samuel Houston, of Wolcott, Dr. C. P. Jennings, of Macedon, and Dr. George D. Winchell, of Rose.\*

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
M. Warren Arnold	57	Vanderbilt	August 21	Bronx
Jacob Axelrad	63	P. & S., N.Y.	August 9	Bronx
Robert Boyd	75	P. & S., N.Y.	August 1	Brooklyn
Annie S. Daniel	85	WMCNY Inf.	August 10	Manhattan
Mark Gordon	70	Balt. Med.	August 17	Brooklyn
Frederick C. Holden	76	N.Y. Univ.	August 27	Manhattan
James P. Jordan	43	St. Louis	July 23	Buffalo
William H. Morrison	76	P. & S., N.Y.	August 26	Manhattan
Elmer E. Owen	62	Michigan	August 2	Batavia
Frederick A. Smith	76	P. & S., N.Y.	August 7	Troy
Laird S. Van Dyck	51	Rush	August 9	Manhattan
John D. Vedder	81	Albany	August 7	Johnstown
Nathan A. Warren	88	Bellevue	August 14	Yonkers

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## Graduate Fortnight of Academy of Medicine to Be Held in October

The New York Academy of Medicine will present its seventeenth graduate fortnight, on "Infections and Their Treatment," from October 9 to 20.

**Evening Session—8:30 O'Clock**

**New York Academy of Medicine**

*Monday, October 9*

- I. Address of Welcome  
Arthur Freeborn Chace, President, the New York Academy of Medicine
- II. Scientific program
  1. The Ludwig Kast Lecture\*: The Mode of Action of Antibacterial Agents  
René J. Dubos, Rockefeller Institute
  2. Factors Which Influence the Choice of Antibacterial Agents  
Colin M. MacLeod, Professor of Bacteriology, New York University College of Medicine

*Tuesday, October 10*

1. Sulfonamides in the control of streptococcus infections  
Hugh J. Morgan, Brig. Gen., U.S.A.
2. Mass Sulfadiazine Prophylaxis of Respiratory Diseases in the U.S. Navy.  
Alvin F. Coburn, Comdr., MC-V(S), USNR

*Wednesday, October 11*

1. Rickettsial Infections in the Southwest Pacific Area  
Francis G. Blake, Sterling Professor of Medicine, Yale University School of Medicine
2. Infectious Hepatitis  
S. Bayne-Jones, Brig. Gen., U.S.A.

*Thursday, October 12*

1. Chemotherapy of Syphilis  
Joseph Earle Moore, Associate Professor of Medicine, Johns Hopkins University School of Medicine
2. Chemotherapy of Gonorrhea  
John F. Mahoney, Senior Surgeon, USPHS

*Friday, October 13*

1. Chemotherapy in Acute Upper Respiratory Infections  
Russel L. Cecil, Professor of Clinical Medicine, Cornell University College of Medicine
2. The Carpenter Lecture: Influenza—Methods of Study and Control  
Thomas Francis, Jr., Professor of Epidemiology, School of Public Health, University of Michigan

*Monday, October 16*

1. The Use of Penicillin in the Treatment of Pneumococcal Infections  
William S. Tillett, Professor of Medicine, New York University College of Medicine
2. Primary Atypical Pneumonia  
John H. Dingle, Director, Commission on Acute Respiratory Diseases, Board for Investigation of Epidemic Diseases, U.S.A.

*Tuesday, October 17*

1. The Treatment of Osteomyelitis  
J. Albert Key, Clinical Professor of Orthopaedic Surgery, Washington University School of Medicine, St. Louis
2. Treatment of Burns and War Wounds  
Lewis K. Ferguson, Capt., (MC), USNR
3. Discussion  
Philip D. Wilson, Surgeon-in-Chief, Hospital for Special Surgery

\* In memory of Dr. Ludwig Kast, who proposed the Graduate Fortnight.

*Wednesday, October 18*

1. Recent Developments in Sulfonamide Therapy  
Harrison F. Flippin, University of Pennsylvania
2. Use of the Immune Globulin Fraction of Human Plasma in Acute Infections.  
Charles A. Janeway, Assistant Professor of Pediatrics, Harvard Medical School

*Thursday, October 19*

1. The Reactions of Tissues Following Infection and Their Place in an Environmental Conception of the Nature of Disease  
Wiley D. Forbus, Professor of Pathology, Duke University
2. Brucellosis (Undulant Fever)—Problems of Diagnosis and Treatment  
Harold J. Harris, Lt. Comdr., (MC), USNR

*Friday, October 20*

Panel Discussion: Evaluation of Sulfa Drugs and Penicillin

David P. Barr, *Chairman*; René J. Dubos, Colin M. MacLeod, John F. Mahoney, Frank L. Meleney, William S. Tillett

### Morning Panel Discussions

*Morning Panel Discussions will be held at the Academy as shown in the following schedule. Fellows of the Academy and registrants are invited to attend and participate. It is requested that questions for discussion be submitted in advance of the conference to Dr. Mahlon Ashford at the Academy, or if this is not feasible, they may be submitted in writing to the Chairman during the discussion.*

*Tuesday, October 10, 11:00—12:30 A.M.*

*Subject:* Pneumonia types and their response to various forms of chemotherapy

*Chairman:* Russell L. Cecil. *Members:* Alvan L. Barach; Maxwell Finland, Boston; Norman Plummer, Maj., (MC), AUS

*Friday, October 13, 11:00—12:30 A.M.*

*Subject:* Treatment of syphilis and gonorrhea

*Chairman:* Joseph Earle Moore, Baltimore. *Members:* Oscar F. Cox, Boston; Harry Eagle, Baltimore; Evan W. Thomas

*Tuesday, October 17, 11:00—12:30 A.M.*

*Subject:* Treatment of infections of eye, ear and upper respiratory tract

*Chairman:* Samuel J. Kopetzky. *Members:* Conrad Berens; C. Ward Crampton; W. Morgan Hartshorn; Westley M. Hunt; Charles J. Imperatori; John D. Kernan; Andrew B. Paul

### Afternoon Hospital Clinics

*Hospital Clinics will be held from 2:00 to 5:00 P.M. during the Fortnight. These clinics will be devoted to the course and treatment of infections.*

Tuesday, October 10—Bellevue and Beth Israel  
Wednesday, October 11—Babies and Montefiore  
Thursday, October 12—Morrisania and Mount Sinai


Friday, October 13—Home for Aged and Infirmary  
Hebrews and Post-Graduate

Monday, October 16—Lenox Hill and Woman's  
Tuesday, October 17—St. Luke's and Willard Parker

Wednesday, October 18—Jewish Hospital of Brooklyn and Presbyterian

Thursday, October 19—Flower-Fifth Avenue and New York

Friday, October 20—Polyclinic and Roosevelt



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# Hospital News

## Preliminary Plans for A.H.A. Meeting Announced

**P**RELIMINARY plans for the convention of the American Hospital Association to be held in Cleveland October 2 to 6 put the spotlight of attention on postwar planning, public health, rural hospital planning, trustees, and public relations. All are subjects for general sessions with no conflicting meetings.

The day-by-day program is as follows: Monday afternoon, postwar planning session; Monday night, president's session; Tuesday morning, public health session; Tuesday afternoon, sections on small hospitals, volunteers, purchasing, public hospitals, medical social service, and children's hospitals; Tuesday night, trustee session.

On Wednesday morning the rural hospital planning session is scheduled; Wednesday afternoon will include sections on Blue Cross plans, nursing, outpatient departments, business management, pharmacy, and tuberculosis; Wednesday evening will be the United Nations session.

Thursday morning is devoted to public relations. Sections on Thursday afternoon are: dietetic, records librarians, construction and mechanics, medi-

cal staff, personnel management, and mental hygiene.

The usual dinner and dance will take place in the evening. Friday morning is the "Mac and Bob" round table.

Among the speakers whose acceptances have been received are Thomas S. Gates, chairman of the Commission on Hospital Care and president of the University of Pennsylvania; Marshall E. Dimock, former assistant deputy administrator of the War Shipping Administration; Herluf V. Olsen, dean of Amos Tuck School of Business Administration, Dartmouth College; Morris Fishbein, M.D., editor, *J.A.M.A.*; Julius L. Wilson, M.D., president, American Trudeau Society; Robert Bingham, chairman of the board, Cleveland Hospital Council, and president, St. Luke's Hospital, Cleveland; John F. Hunt, of Foote, Cone, and Belding; Gladys Talbot Edwards, director of education, Farmers Educational and Cooperative Union of America; and Ellen Anderson, director of health education, Farm Foundation.—*The Modern Hospital*, August, 1944

## Dr. Bachmeyer Heads Hospitals' Survey

**D**R. ARTHUR C. BACHMEYER, of the University of Chicago, was appointed director of a two-year study of the country's hospital facilities and postwar hospital requirements at an organizational meeting of the Commission on Hospital Care held in Philadelphia in August.

Dr. Thomas S. Gates, president of the University of Pennsylvania, is chairman of the group of economic leaders and hospital authorities who com-

pose the commission, which recently was formed at the suggestion of the American Hospital Association.

Associate dean of the division of biologic sciences and director of hospitals at the University of Chicago, Dr. Bachmeyer will be in full charge of the study, which is designed to uncover the country's most pressing needs in hospital facilities and to make plans for meeting these requirements.



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# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N.Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

## RECEIVED

**Lippincott's Quick Reference Book for Medicine and Surgery.** A Clinical, Diagnostic and Therapeutic Digest of General Medicine, Surgery, and the Specialties, Compiled Systematically from Modern Literature. By George E. Rehberger, M.D. Twelfth edition. Octavo of 1460 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1944. Cloth, \$15.

**Textbook of Gynecology.** By Emil Novak, M.D. Second edition. Octavo of 708 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$8.00.

**Segmental Neuralgia in Painful Syndromes.** By Bernard Judovich, M.D., and William Bates, M.D. Octavo of 313 pages, illustrated. Philadelphia, F. A. Davis Co., 1944. Cloth, \$5.00.

**Metastases (Medical and Surgical).** By Malford W. Thewlis, M.D. Quarto of 230 pages, illustrated. Charlotte, N.C., Charlotte Medical Press, 1944. Cloth, \$5.00.

**Fundamentals of Internal Medicine.** By Wallace Yater, M.D. Second edition. Octavo of 1204 pages, illustrated. New York, D. Appleton Century Co., Inc., 1944. Cloth, \$10.

**Simplified Diabetic Management.** By Joseph T. Beardwood, Jr., M.D., and Herbert T. Kelly, M.D. Fourth edition. Duodecimo of 172 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1944. Cloth, \$1.50.

**The Art of Anaesthesia.** By Paluel J. Flagg, M.D. Seventh edition. Octavo of 519 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1944. Cloth, \$6.00.

**The Medical Clinics of North America.** Mayo Clinic Number. July, 1944. Octavo. Philadelphia, W. B. Saunders Co., 1944. Published bi-monthly (six numbers a year). Cloth, \$16 net; paper, \$12 net.

**Deafness and the Deaf in the United States.** By Harry Best. Octavo of 675 pages. New York, Macmillan Co., 1943. Cloth, \$6.50.

**Child Care and Training.** By Marion L. Faegre and John E. Anderson. Sixth edition, revised. Duodecimo of 314 pages, illustrated. Minneapolis, University of Minnesota Press, 1943. Cloth, \$2.50.

**Surgical Disorders of the Chest. Diagnosis and Treatment.** By Maj. J. K. Donaldson, M.D., (MC), AUS. Octavo of 364 pages, illustrated. Philadelphia, Lea & Febiger, 1944. Cloth, \$6.50.

**The Specialization of Medicine. With Particular Reference to Ophthalmology.** By George Rosen. Octavo of 94 pages. New York, Froben Press, 1944. Paper, \$2.00.

**The Gastro-Intestinal Tract. A Handbook of Roentgen Diagnosis.** By Fred Jenner Hodges, M.D. Octavo of 320 pages, illustrated. Chicago, Year Book Publishers, 1944. Cloth, \$5.50.

**Clinical Urology.** By Oswald Swinney Lowsley, M.D., and Thomas Joseph Kirwin, M.D. Second edition. (In two volumes). Octavo of 1,769 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$10 per set.

**Manual of Urology.** By R. M. LeComte, M.D. Third edition, revised. Octavo of 305 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$4.00.

**Bailey's Text-Book of Histology.** Revised by Philip E. Smith, Ph.D., and Wilfred M. Copenhaver, Ph.D. Eleventh edition. Octavo of 786 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$6.00.

**Rehabilitation, Re-Education and Remedial Exercises.** By Olive F. Guthrie Smith. Octavo of 424 pages, illustrated. Baltimore, Williams & Wilkins Co., 1943. Cloth, \$6.00.

**Practical Methods in Biochemistry.** By Frederick C. Koch and Martin E. Hanke. Fourth edition, revised. Octavo of 353 pages, illustrated. Baltimore, Williams & Wilkins Co., 1943. Cloth, \$2.25.

## REVIEWED

**Clinics.** Vol. II. February, 1944. No. 5. Edited by George Morris Piersol, M.D. Octavo of 226 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1944. Published bi-monthly. Paper, \$12, by subscription, \$2.00 a single copy. Cloth, \$16 by subscription, \$3.00 a single copy.

This issue of *Clinics* includes a symposium on war medicine which is timely and which should be of interest to the general practitioner as well as to the doctor engaged in military medicine. It is made up of teaching panels presented at the fifty-first annual meeting of the Association of Military Surgeons of the United States.

There is an especially illuminating discussion of chemotherapy, including pharmacology, toxicology, application, and results of the sulfonamides, penicillin, gramicidin, and antibiotic action on gram-positive and gram-negative bacilli.

The discussion of venereal diseases features such problems of control as diagnosis, treatment, epidemiology, prophylaxis, and education, which have arisen from the intensified large-scale activities accompanying warfare.

The importance of nutritional elements and their activity in combating fatigue are stressed.

Other enlightening discussions on fractures, plastic and reconstructive surgery, war wounds and burns, and gastrointestinal disorders, presented by men well versed in their subjects, make this volume worthy reading matter.

H. M. FEINBLATT

**Biochemistry for Medical Students.** By William Veale Thorpe. Third edition. Octavo of 476 pages illustrated. Baltimore, Williams & Wilkins Co., 1943. Cloth, \$4.50.

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The author has presented in a relatively compact volume a fairly comprehensive dissertation on biochemistry and the physiology of metabolism. It is not a textbook on the subject, nor is it intended to be one. It is planned for the medical and dental student.

The first part of the book is devoted to elementary physical chemistry and to the biochemistry of carbohydrates, proteins, and fats. The second part is devoted to the metabolism of foodstuffs. The author has included, in Part Three, a discussion of the energy requirements of the body, principles of nutrition, and the nature and composition of the common foodstuffs.

The book is well written.

WILLIAM S. COLLENS

The Medical Clinics of North America. Philadelphia Number. November, 1943. Index 1941-1943. Octavo. Philadelphia, W. B. Saunders Co., 1943. Published bimonthly (six numbers a year). Cloth, \$16 net; paper, \$12 net.

The Philadelphia Number of the *Medical Clinics of North America* is devoted mainly to a symposium on medical emergencies on the home front. There are several extremely interesting articles, of which those by Dr. Flippen *et al.* on sulfamerazine and by Dr. Reynold S. Griffith on recognition and management of cardiac emergencies are particularly good. Dr. Weiss' article on the psychosomatic aspects of medical practice in wartime will be of interest to everyone. In one article, by Dr. Frederick K. Albrecht, the use of amphetamine sulfate is recommended in the prevention and treatment of seasickness.

MILTON PLOTZ

Physical Foundations of Radiology. By Otto Glasser, Ph.D., Edith H. Quimby, Sc.D., Lauriston S. Taylor, Ph.D., and J. L. Weatherwax, M.A. Duodecimo of 426 pages, illustrated. New York, Paul B. Hoeber, Inc., 1944. Cloth, \$5.00.

Four well-known physicists have pooled their experiences in radiologic physics and have produced a book most useful for the physician who wishes to become a specialist in radiology and for the radiologist who wishes to refresh and broaden his knowledge of physics.

From the physical aspects of the darkroom procedures all the way to the physical problems connected with dosage in x-ray and radium therapy, the reader will find every physical question answered authentically, clearly, concisely, and in a nonmathematical way.

The necessity for adequate protection is stressed with commendable emphasis. The results of genetic research have received due consideration with regard to protection.

The latest achievements of physics in general have been touched upon, and descriptive material of nuclear physics forms a welcome addition to the purely radiologic parts of the book.

S. W. WESTING

Know Your Hay Fever. By A. P. Sperling. With chapters on "Clinical Applications" by Arthur B. Berresford, M.D. Octavo of 241 pages, illustrated. New York, Frederick Fell, Inc., 1943. Cloth, \$2.00.

Without belittling the intelligence of the reader, the author has given a lucid explanation of hay fever, its symptoms, cause, effect, and treatment, that will be thoroughly understandable to the average layman.

His medical information is accurate and well documented. Evaluation of the various methods of

commend to your patients

JOSEPH H. FRIES

The First Bound Supplement to the Pharmacopoeia of the United States of America. Twelfth Revision (First U.S.P. XII Bound Supplement—1943). By authority of the United States Pharmacopoeial Convention. Prepared by the Committee of Revision and Published by the Board of Trustees. Octavo of 104 pages Easton, Pa., Mack Printing Co., 1944 Paper

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1940, would be published in bound form as the need arose, the First Bound Supplement becomes official from July 1, 1944.

The Supplement contains thirty-four articles which have been added to the USP XII. Several articles refer to the same drug put up in different forms, for instance, diethylstilbestrol in powder form, in capsule, in tablet, and for injection. Among the other preparations may be mentioned hexavitamin, totaquine, triasyn B, triasyn B with liver, estradiol, liver B-vitamins injection, ergonovine maleate injection, menadione sodium bisulfite injection, dried yeast, sulfadiazine, sodium sulfadiazine, sulfaguanidine, sodium sulfithiazole, succinylsulfathiazole, stronger solution of hydrogen peroxide, oxophenarsine hydrochloride, and medicinal zinc peroxide

CHARLES SOLOMON

Small Community Hospitals. By Henry J. Southmayd and Geddes Smith. Octavo of 182 pages New York, Commonwealth Fund, 1944 Cloth, \$2.00

Of the many valuable projects undertaken by the Commonwealth Fund in the field of community health and medicine, the effort to extend the influence and effectiveness of the rural hospital is outstanding

This small volume presents, in compact form, the results of experience in the various phases of rural hospital administration. The chapter on "The Rural Hospital and the Medical Team" is of special interest to the clinical physician. The charts and tables in the appendix are very practical and should be equally interesting to him

ALFRED E. SHIPLEY

Education and Health of the Partially Seeing Child. By Winifred Hathaway. Octavo of 216 pages, illustrated. Published for the National Society for the Prevention of Blindness, Inc., by Columbia University Press, New York, 1943 \$2.50

This work, published for the National Society for the Prevention of Blindness, Inc., should be an excellent guide for the use of "administrators, supervisors, teachers, nurses, social workers and others concerned with the welfare of children" who are visually handicapped

It discusses the problems of finding the partially seeing children; the selection and preparation of the teacher, preparing the school, the equipment of classrooms, methods of conducting classes, and other kindred problems. This is also a chapter on "Facts about the Eye and Eye Hygiene" written in a simple and not too technical style for the non-medical worker.

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*Southern Medicine and Surgery*, says "The revision of this masterpiece comes at a particularly opportune time, when, by reason of the wider diffusion of tropical diseases by airplane travel and of the great number of fighting men in tropical countries, there is vital need to have intimate knowledge of these diseases, their prevention and cure."

*Archives of Dermatology and Syphilology*, says "It is a monumental work which reflects the greatest credit on the author and his associates."

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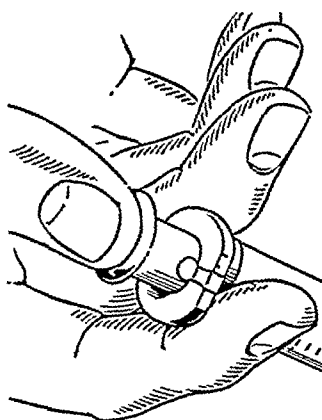
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## RAGWEED POLLEN COUNT STATIONS

For the first time since the Department started its ragweed pollen count surveys in 1937, stations will be located in the Catskill Mountain and Ulster as well as in the purpose is to determine whether or not hay fever havens can be established in that section of the State.

One of the stations has been installed on the farm of Justice C. C. VanValin. This farm is located in the north-central part of the Catskills in Greene County. The second station has been placed at Budapest Rest at Big Indian in the southern section of the Catskills in Ulster County.

Three stations will be operated this year in the Central Adirondacks: at Remsen, Oneida County, on the southern outskirts of the so-called pollen-free area; at Lowville, Lewis County, on the western rim of that area; and at North Creek, Warren County, on the northeastern edge of the "free" section. The purpose of installing stations in these three places is to ascertain whether the free area has enlarged as the result of continued effort to eliminate the weed over a period of years.

It is generally believed that some sections of the Catskills might be free from the pollen because of a

Stations, which were placed in operation on August 12, will continue through October 12 — *Health News*

## DRIVE FOR INDUSTRIAL NURSES

The American Association of Industrial Nurses will, on October 1, launch its drive for new members. This association was organized in 1942 in recognition of the growth and expansion of industrial nursing.

Though the war has brought an extraordinary growth in this area, some of which will be cut as war industries close, industrial nursing is now established as an important and permanent branch of nursing. It demands an organization whose policies are shaped by those who have blazed the trails in this area, and is enriched by the experiences of the new recruits.

Industrial nursing is an integral part of the growing movement to provide safety and health to our great worker population. This movement is a substantial and growing phase in our country's efforts to prevent accident and disease and to promote health.

The A.A.I.N. represents nurses in every field of industrial and mercantile establishments. Its governing board is representative of the country as a whole. Its membership requirements are on a par with those of other standard-making nursing bodies. The A.A.I.N. actively encourages membership in the nursing profession's official bodies, the district, state, and national nurses associations. It also

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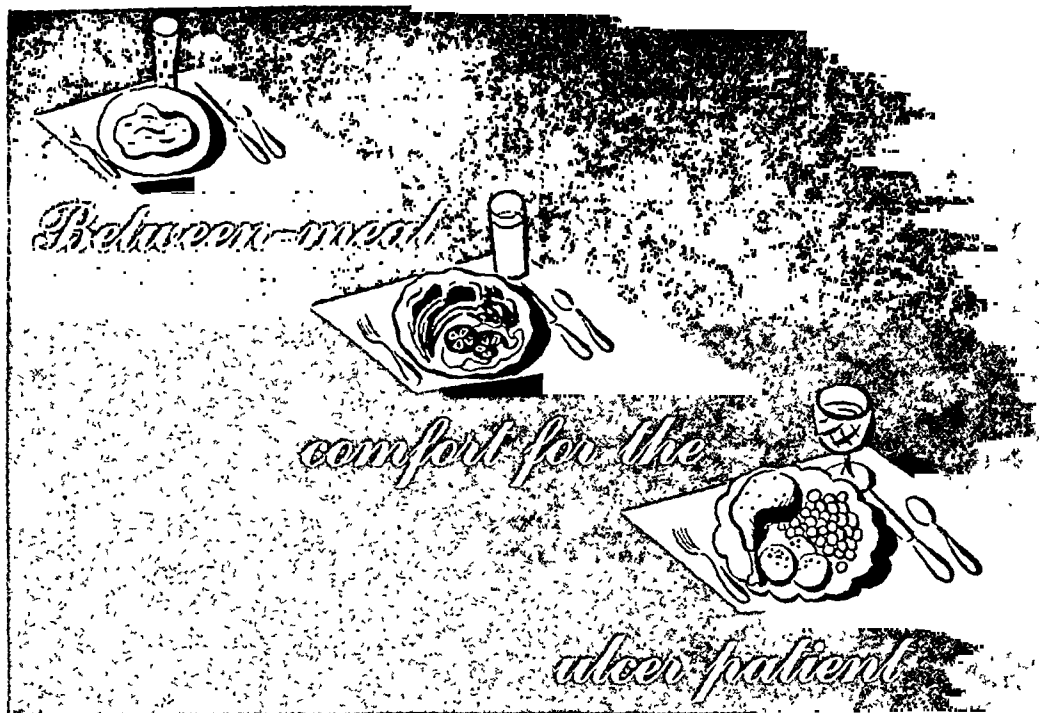
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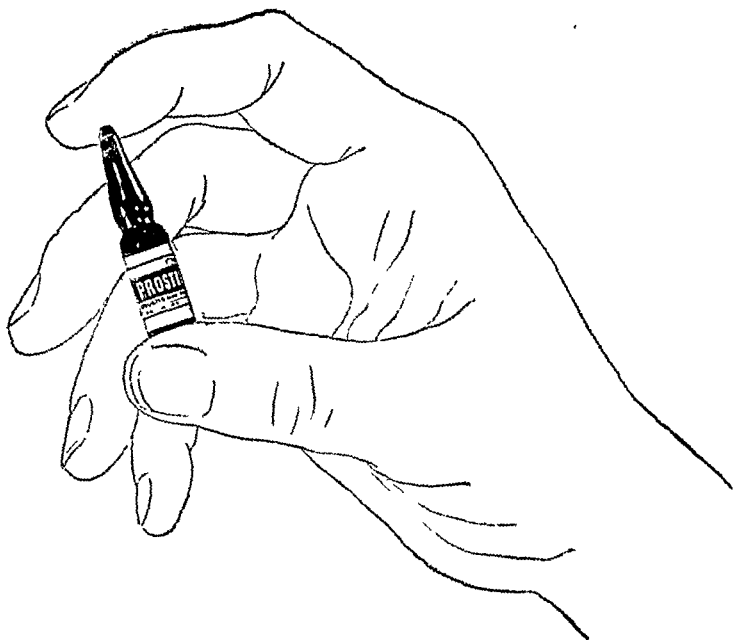
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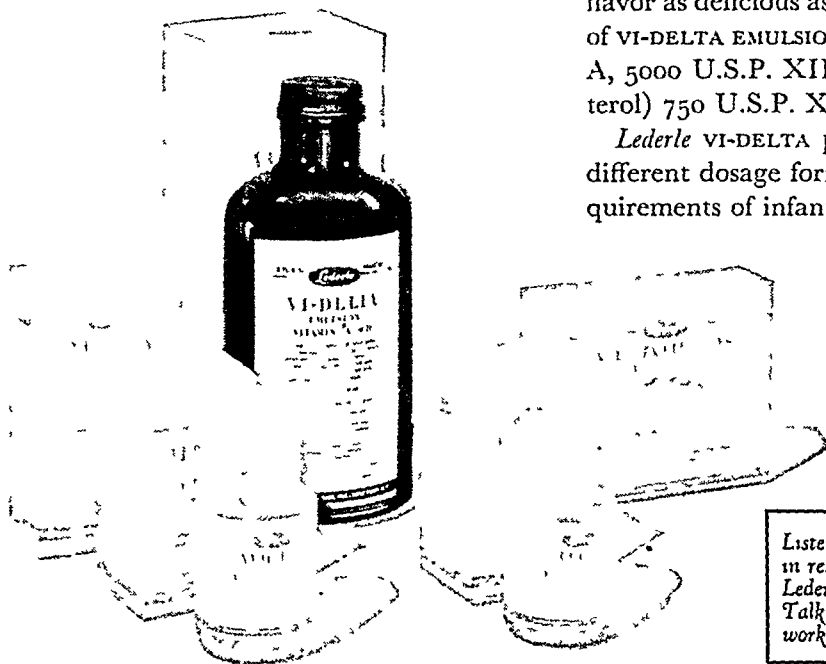
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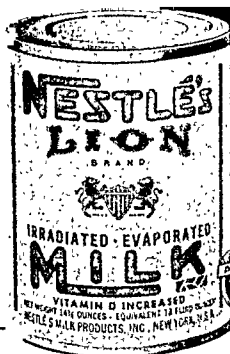
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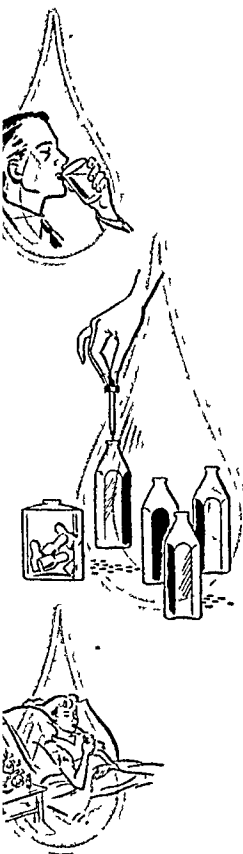
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1. Marriott, William McKim. "Infant Nutrition," revised by Jeans, Mosby, St. Louis, 3rd Edition, 1941
2. Jeans, Philip C.: "The Feeding of Healthy Infants and Children," J.A.M.A., 120.913, 1942.

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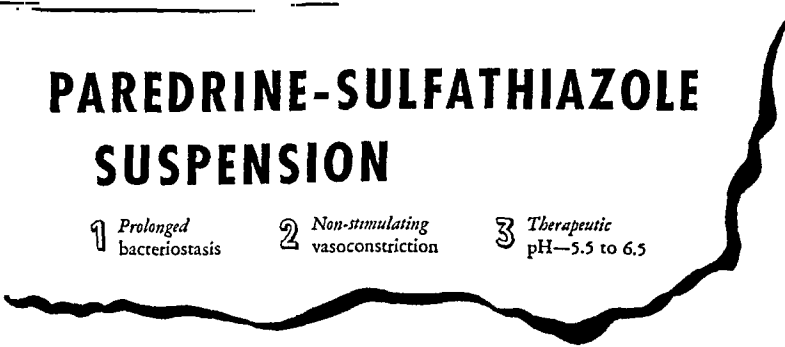
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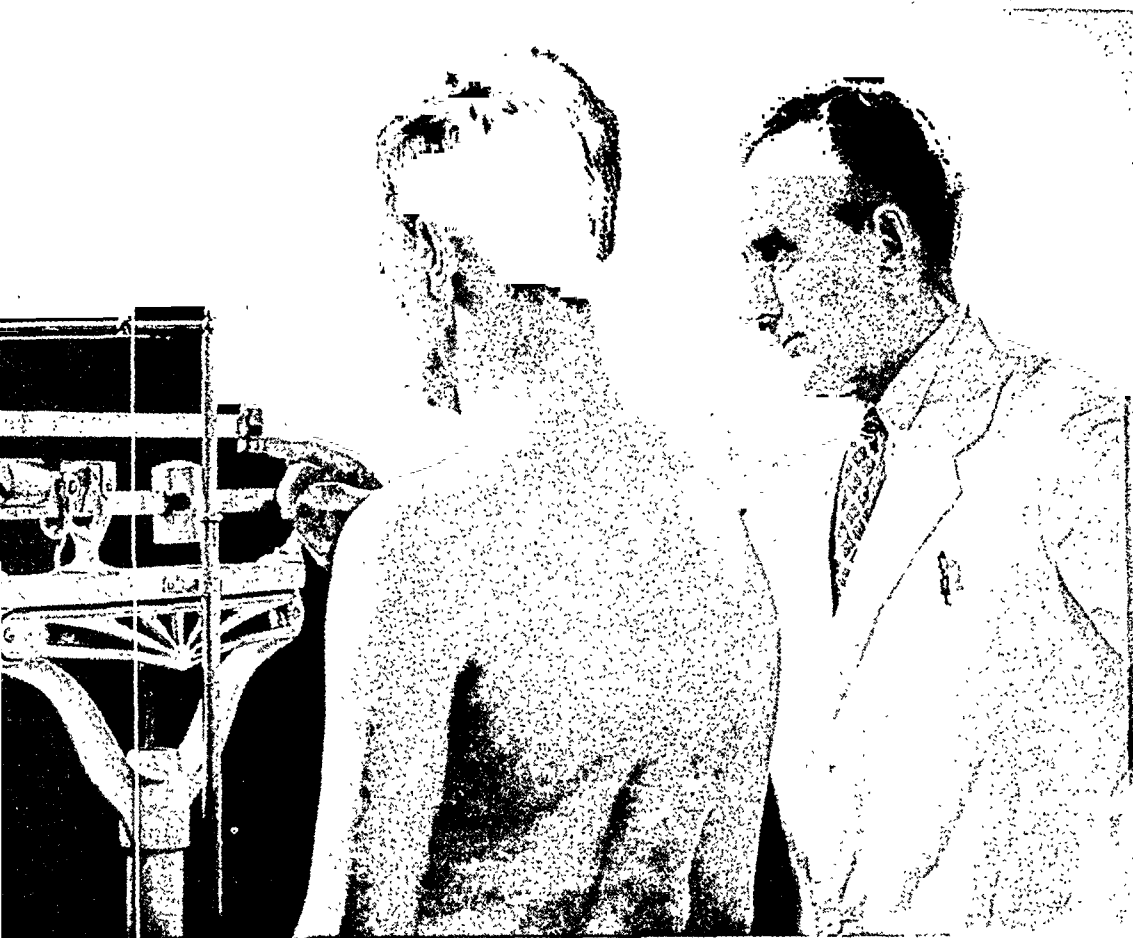
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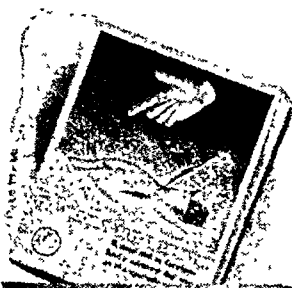
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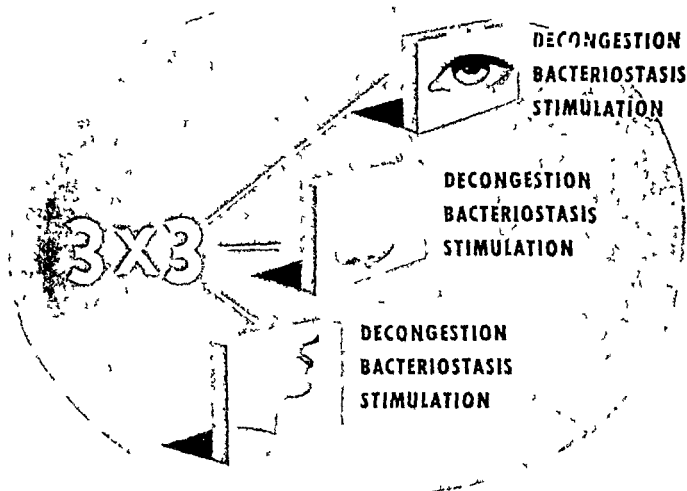
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**NOT ONLY CONTRA-CONGESTIVE**—There is an EXTRA FACTOR in mucous membrane antiseptics, in decongestion with ARGYROL. This important factor is physiologic stimulation of tissue defense function. It is a combination of physico chemical and bacteriostatic properties which go far beyond the usual concept of what an antiseptic should do. For:

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**ARGYROL** FOR PHYSIOLOGIC STIMULATION  
OF TISSUE DEFENSE FUNCTION

# IN IMPAIRED FAT DIGESTION

Degalol, the original chemically pure deoxycholic acid, is the constituent of human bile which is chiefly concerned with the emulsification of ingested fats.

When bile secretion is deficient, or totally lacking as in biliary fistula, the administration of Degalol assures not only digestion and

absorption of food fats but also of the fat-soluble vitamins A, D, E, and K.

When fatty foods prove intolerable in the absence of cholecystic pathology, Degalol usually relieves the postprandial distress and permits of liberalization of the diet.

Supplied in boxes of 100 1½ grain tablets.

Riedel - de Haen, Inc., New York 13, N. Y.

## Degalol

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Cuts short the period of the illness, relieves the distressing cough and gives the child rest and sleep. Also valuable in other PERSISTENT COUGHS and in BRONCHITIS and BRONCHIAL ASTHMA. In four-ounce original bottles. A teaspoonful every 3 or 4 hours.

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# The ideal answer to wound infection IS ITS PREVENTION



**I**T is axiomatic that virtually all wounds are contaminated and thus susceptible to infection.

Since the presence of infection retards wound healing, its prevention is a powerful factor favoring healing.

Azochloramid\* is a valuable and widely used germicide for prophylaxis against wound infections. It is effective against many types of pathogenic organisms ▲ active for prolonged periods even in the presence of organic matter ▲ virtually harmless to tissue.

Azochloramid requires a minimum of medical attention and dressing changes. It is a convenient and economical means of combatting infection in most types of contaminated lesions.

\*Trade Mark Reg. U. S. Pat. Off.

For descriptive literature and sample write to  
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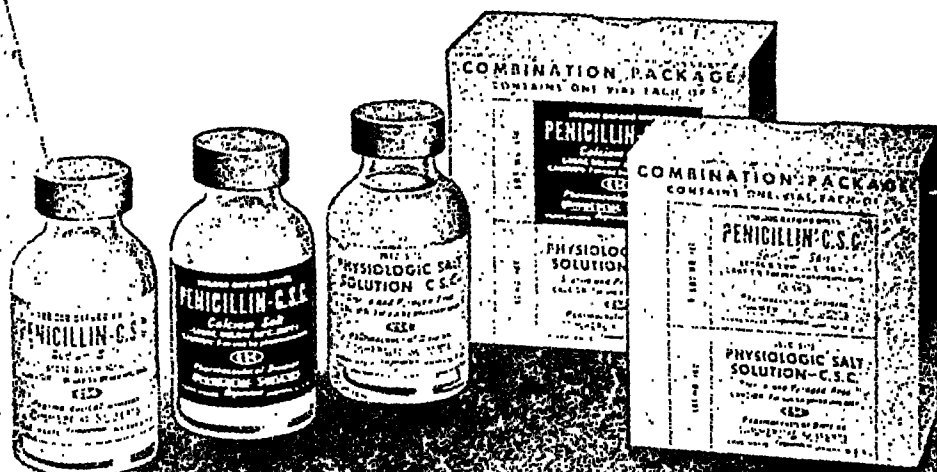


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PRODUCTS, INCORPORATED  
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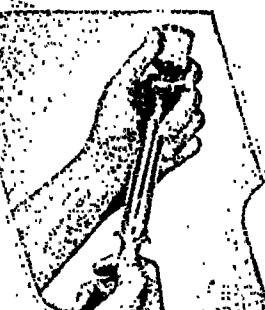




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W. B. E. Smith Bros. & Co. (Hynson, who usual concentration (5000 Oxford units per cc.) inject 20 cc. of physiologic salt solution into the vial in the usual aseptic procedure.



Invert the vial and syringe (with needle in vial), and withdraw the amount of penicillin solution required for the first injection.

Store vial with remainder of solution in refrigerator. Solution is ready for subsequent injections during the next 24 hours.



# PENICILLIN-C.S.C.

For administration in the physician's office or in the patient's home, Penicillin-C.S.C. will be available in a convenient combination package, as soon as the drug is released for unrestricted use in civilian practice. This combination package provides two rubber stoppered, serum type vials. One vial contains enough physiologic salt solution to permit the withdrawal of 20 cubic centimeters. The other vial contains 100,000 Oxford Units of penicillin sodium or penicillin calcium\* respectively.

The physiologic salt solution is sterile and free from fever-producing pyrogens. Penicillin-C.S.C.—whether the sodium salt or the calcium salt—is bacteriologically and biologically assayed to be of stated potency, sterile, and free from all toxic substances, including pyrogens, as attested by the control number on the package.

When 20 cc of the physiologic salt solution is withdrawn from its vial, and injected into the penicillin-containing vial under the usual aseptic precautions, the resultant solution presents a concentration of 5000 Oxford Units per cubic centimeter. The solution is then ready for injection, does not require resterilization.

After the desired amount of the solution for the first injection has been withdrawn, the vial containing the remainder of the solution should be stored in the refrigerator. It is ready for the next injection—the desired amount then merely has to be withdrawn under proper sterile technique.

When released for unrestricted marketing, Penicillin-C.S.C. will be stocked throughout the United States by a large number of selected wholesalers. Any pharmacist thus will be able to fill professional orders promptly.

PHARMACEUTICAL DIVISION

**COMMERCIAL SOLVENTS**

17 East 42nd Street Corporation New York 17, N.Y.



*Therapeutic Reference Table... Penicillin*

**CONDITIONS IN WHICH PENICILLIN IS THE BEST THERAPEUTIC AGENT AVAILABLE**

Other use	Penicillin	Other use	Penicillin
1. All streptococcal infections and other bacterial infections	100,000 U.S. Units per 20 cc. vial	2. All staphylococcal infections and other bacterial infections	100,000 U.S. Units per 20 cc. vial
3. All pneumococcal infections and other bacterial infections	100,000 U.S. Units per 20 cc. vial	4. All gonorrheal infections and other bacterial infections	100,000 U.S. Units per 20 cc. vial
5. All meningococcal infections and other bacterial infections	100,000 U.S. Units per 20 cc. vial	6. All syphilitic infections and other bacterial infections	100,000 U.S. Units per 20 cc. vial
7. All diphtheritic infections and other bacterial infections	100,000 U.S. Units per 20 cc. vial	8. All tetanic infections and other bacterial infections	100,000 U.S. Units per 20 cc. vial
9. All bacillary infections and other bacterial infections	100,000 U.S. Units per 20 cc. vial	10. All other bacterial infections	100,000 U.S. Units per 20 cc. vial

temperature not over 50° F (10° C)

A page of the Penicillin C.S.C. Therapeutic Reference Table, showing recommended dosages and modes of administration; a copy is yours for the asking.

# *Smoother Relief*

## in HEARTBURN and NAUSEA of PREGNANCY

In the light of modern evidence, the heartburn of pregnancy derives—not from a gastric hyperchlorhydria—but rather from a spasm of the cardiac sphincter of the esophagus.\*

Along with nausea of pregnancy, it is thus classified as essentially a neuromuscular disorder, calling for effective spasmolytic therapy.

Donnatal—a compound of phenobarbital with predetermined and controlled proportions of the belladonna alkaloids—proves particularly helpful in these often difficult cases, since it—



Affords all the advantages of natural belladonna alkaloids—  
**YET IS SIGNIFICANTLY NON-TOXIC;**



Provides for the sedation so frequently required—  
**YET IS ENTIRELY NON-NARCOTIC; AND**



Has marked pharmacologic potency—  
**YET COSTS LESS**



It actually costs about half as much as synthetic preparations—even less than tincture of belladonna and elixir of phenobarbital!

Formula: Each tablet contains belladonna alkaloids (hyoscyamine, atropine, and scopolamine) equivalent to approximately 5 min. tr. belladonna; plus 1/4 gr. phenobarbital.

Available: in bottles of 100 tablets.

**A. H. ROBINS COMPANY, INC.**  
**RICHMOND 19, VA.**

\*Williams, N. H. Am J. Obs & Gyn 42 5, Nov '41

# DONNATAL

**THE DEPENDABLE ANTI-SPASMODIC AND SEDATIVE**

# Natural Vitamins

## IN MASSIVE DOSAGE FOR CUTANEOUS AFFECTIONS

Whether the beneficial results obtained with Apolarthron in certain skin affections are due to a direct pharmacodynamic action or merely to the correction of a vitamin deficiency and its cutaneous manifestations, is yet to be determined. The fact remains that its administration in adequate dosage (3 to 4 capsules daily) rapidly produces notable results in acne, psoriasis and keratosis follicularis (Darier's disease).

A rapidly growing bibliography attests to the efficacy of both vitamins A and D in high potency, as found in Apolarthron, for the effective treatment of these skin diseases.

### ACNE

Doktorsky, A., and Platt, S. S.: Vitamin D in the Treatment of Acne Vulgaris, J.A.M.A. 101: 275 (July 22) 1933.

Hinrichsen, J., and Ivy, A. C.: The Value of Irradiated Ergosterol in the Treatment of Acne Vulgaris, Illinois M. J. 74:85 (July) 1938.

Maynard, M. T. R.: Vitamin D in Acne: Comparison with X-ray Treatment, California & West. Med. 49:127 (Aug.) 1938.

Kulchar, G. V.: Discussion of Vitamin D in Acne, California & West. Med. 49:131 (Aug.) 1938.

Straumfjord, J. V.: Vitamin A: Its Effect on Acne. A Study of One Hundred Patients, Northwest Med. 42:219 (Aug.) 1943.

### PSORIASIS

Krafka, J., Jr.: A Simple Treatment for Psoriasis, J. Lab. & Clin. Med. 21:1147 (Aug.) 1936.

Ceder, E. T., and Zon, L.: Treatment of Psoriasis with Massive Doses of Crystalline Vitamin D and Irradiated Ergosterol; Preliminary Report, Pub. Health Rep. 52:1580 (Nov. 5) 1937.

Brunsting, L. A.: Treatment of Psoriasis by Ingestion of Massive Doses of Vitamin D, Proc.

Staff Meet., Mayo Clin. 13:280 (May 4) 1938.

Krafka, J.: Vitamin D Therapy in Psoriasis, J. M. A. Georgia 30:398 (Sept.) 1941.

### KERATOSIS FOLLICULARIS

(Darier's Disease)

Peck, S. M.; Glick, A. W.; Sobotka, H. M.; Chargin, L.: Vitamin A Studies in Cases of Keratosis Follicularis (Darier's Disease), Arch. Dermat. & Syph. 48:17 (July) 1943.

Carleton, A., and Steven, D.: Keratosis Follicularis, Arch. Dermat. & Syph. 48:143 (August) 1943.

*Professional correspondence is invited*



**J. B. ROERIG & COMPANY**  
536 Lake Shore Drive • Chicago 11, Illinois

# APOLARTHRON

# *Smoother Relief*

## in HEARTBURN and NAUSEA of PREGNANCY

In the light of modern evidence, the heartburn of pregnancy derives—not from a gastric hyperchlorhydria—but rather from a spasm of the cardiac sphincter of the esophagus.\*

Along with nausea of pregnancy, it is thus classified as essentially a neuromuscular disorder, calling for effective spasmolytic therapy.

Donnatal—a compound of phenobarbital with predetermined and controlled proportions of the belladonna alkaloids—proves particularly helpful in these often difficult cases, since it—

1

*Affords all the advantages of natural belladonna alkaloids—*

**YET IS SIGNIFICANTLY NON-TOXIC;**

2

*Provides for the sedation so frequently required—*

**YET IS ENTIRELY NON-NARCOTIC; AND**

3

*Has marked pharmacologic potency—*

**YET COSTS LESS**

It actually costs about half as much as synthetic preparations—even less than tincture of belladonna and elixir of phenobarbital!

Formula: Each tablet contains belladonna alkaloids (hyoscyamine, atropine, and scopolamine) equivalent to approximately 5 min. tr. belladonna; plus ¼ gr. phenobarbital.

Available: in bottles of 100 tablets.

**A. H. ROBINS COMPANY, INC.**  
**RICHMOND 19, VA.**

\*Williams, N. H.: Am. J. Obs. & Gyn. 42:5, Nov. '41



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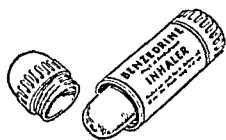


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Each tube is packed with racemic amphetamine, S.K.F., 200 mg.; oil of lavender, 60 mg.; menthol, 10 mg.

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## White's SULFATHIAZOLE GUM

... in effective topical Oropharyngeal chemotherapy

The unique value of this new, effective method for the local treatment of certain throat infections consists in this:

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Iodine is a germicide upon which the surgeon can safely place his reliance. It is a valuable agent for pre-operative skin preparation, for it penetrates the epidermis and exerts a destructive action on the bacteria with which it comes in contact.

The method of skin disinfection with Iodine is both simple and rapid. More important . . . it also is trustworthy.

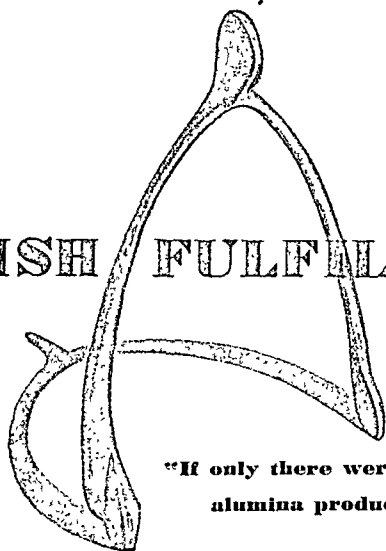
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*Foe of Infection*

Iodine Educational Bureau, Inc.

120 Broadway, New York 5, N. Y.

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**"If only there were a non-constipating  
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'GELUSIL'\* Antacid Adsorbent is a wish fulfilled in peptic ulcer therapy. It contains an alumina gel which is non-reactive with gastric hydrochloric acid and does not break down, as do ordinary gels, into astringent, constipating aluminum chloride. 'GELUSIL' Antacid Adsorbent not only forms a colloidal shield protecting the inflamed peptic ulcer area, but effectively inactivates excess proteolytic pepsin. Through magnesium trisilicate, uniformly dispersed in its gel phase, 'GELUSIL' Antacid Adsorbent exerts a powerful and prolonged antacid-adsorbent antipeptic action.

Thus, within minutes, 'GELUSIL' Antacid Adsorbent provides relief which lasts for hours...Supplied in bottles of 6 and 12 fluidounces, and in boxes of 50 and 100 cellophane wrapped tablets. \*Trademark Reg. U. S. Pat. Off.

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**'GELUSIL'**  
*antacid adsorbent*



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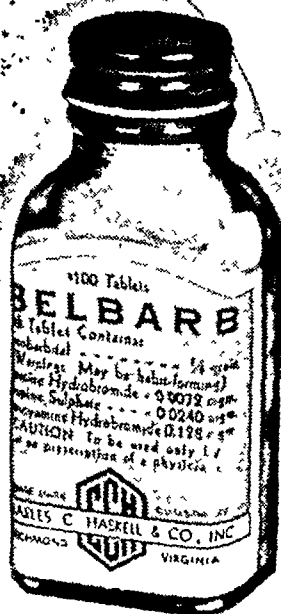
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*Excellent*

SEDATIVE

*and*

HYPNOTIC



The potentiation of the central action of phenobarbital by the belladonna alkaloids (Friedberg, Arch. f. exp. P. & P. CLX, 276) renders possible attainment of desired effects with relatively small doses, thus avoiding "hang over" and other unpleasant side-actions. In contrast to galenical preparations of belladonna, such as the tincture, Belbarb *has always the same proportion of the alkaloids.*

**Indications:** Neuroses, migraine, functional digestive and circulatory disturbances, vomiting of pregnancy, menopausal disturbances, hypertension, etc.

**Formula:** Each tablet contains  $\frac{1}{4}$  grain phenobarbital and the three chief alkaloids, equivalent approximately to 8 minims of tincture of belladonna.

Belbarb No. 2 has the same alkaloidal content but  $\frac{1}{2}$  grain phenobarbital per tablet.

# Seldom sick *but* never well



• Today, with our generously rationed American diet, there are few who develop frank vitamin deficiency syndromes.

But there is a great host of people who do not enjoy buoyant good health because they fail to obtain enough of these all-important accessory food substances.

*They are seldom sick but never well.*

For this great group, additional vitamins are necessary.

And what more convenient way is there to supply this need than to prescribe 'Avicap.'

One 'Avicap' a day supplies the minimum daily requirements of the six vitamins known to be essential in human nutrition.

'Avicap'—Registered Trademark

## *Avicap* Multi-vitamin Capsule

Each 'AVICAP' contains: Vitamin A . . . 5,000 U.S.P. units;  
Vitamin D . . . 500 U.S.P. units; Vitamin B<sub>1</sub> . . . 1 mgm.; Vitamin B<sub>2</sub> . . . 2 mgm.;  
Vitamin C . . . 30 mgm.; Nicotinamide . . . 10 mgm.



BURROUGHS WELLCOME & CO. (U.S.A.) INC., 9-11 East 41st Street, New York 17, N. Y.

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*simplifies*  
**DRIED PLASMA ADMINISTRATION!**

## IT'S EASIER



Simply tap out the plastic disc... exposing rubber stopper... no glass to file!

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Airway tube pre-installed in bottle... eliminates an extra step in administration.

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—saves time!



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# Set the Alarm Clock

## for Midnight and 2 A. M.



\* Alvarez, W. C. How to Avoid Flare Ups of Peptic Ulcer,  
J.A.M.A., 125 903 904 (July 29) 1944

Alvarez\* suggests that when a patient who has had an ulcer goes through an emotional crisis, he should immediately start taking food every hour or two

He shouldn't wait for the expected flare up or hemorrhage or perforation. The extra feedings are probably most needed between the hours of 10 p.m. and 3 a.m.

Horlick's Tablets, left alongside the bed, are ideal for use by such patients as a preventive against night hunger pain.

Horlick's {Powder or Tablets} fits perfectly into the ulcer regimen.

Obtainable at all drug stores

*Recommend*

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PLAIN**

(Powder or Tablets)

**HORLICK'S  
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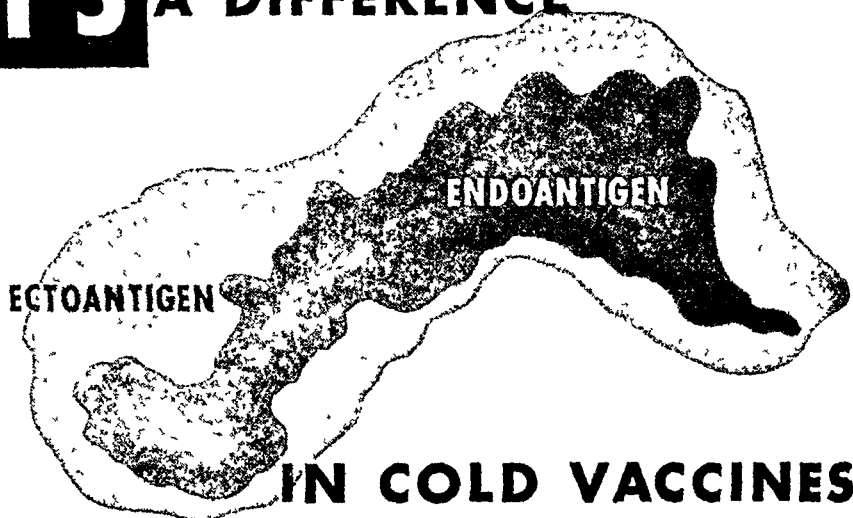
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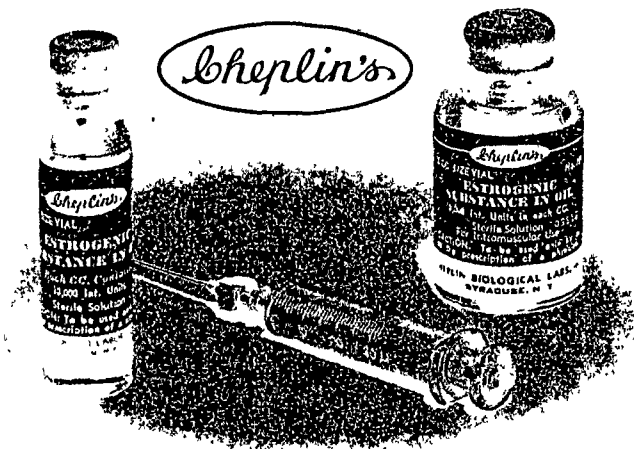
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# NEW YORK STATE JOURNAL OF MEDICINE

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## *Editorial*

### Plain Talk, II

Many of us physicians are too preoccupied with the little trees of medicine to perceive the forest. We argue about details, procedure, and the like, endlessly, with each other. Thus we are prone to stress the differences of opinion which undoubtedly exist on many matters, while forgetting that we, the physicians, representing medicine, the public as the consumer, and government, the political agent of the people, are all in agreement as to the ultimate objective—better medical care for everybody. The people are interested in that.

We all want it. We all want it as soon as possible. The profession of medicine exists for no other reason than to provide it. The public rightly expects it from the medical profession—and gets it, by and large. Government can't do without it if it is to fulfill its constitutional pledge to promote the general welfare, of which the public health is a vital part.

The public knows something about insurance. It has bought billions of dollars worth of it, life, fire, accident, and the like, to its benefit.

Government knows about insurance, too. Because government is, after all, only the people when it does not forget and become biggity.

And the doctors, who are just people also, in spite of the language they use at times, are insurance-minded—couldn't carry on without it, in fact; life, fire, automobile, war-risk, accident, and all that.

So everybody is insurance-minded. And what is there to argue about? Spreading the cost? No; everybody agrees on that point. No argument. Ah! What are we proposing to insure against? The *costs of illness*. Sounds simple. Until you try it.

You can *assure* health only to a limited extent. That's preventive medicine and eugenics.

You can also *insure* against sickness. You can *insure* against the *costs* of being sick. If you know *how*, and *how much* the costs are and *how many* are going to be sick, and for *how long*. Plenty of room here for argument. Because you *have* to be right. You can't sell the insured people a gold brick. At least, not in this state. The law

says so. If you promise something to people for fulfillment in the future, and people pay you in advance for delivery, you have to deliver just what you promised them you would. And, furthermore, people must be satisfied with what they get as a result of that promise which you made to them and for the fulfillment of which *they paid in advance*, often far in advance.

Now, you can pay off your insurance obligation either in services or in money. Some think one way is better, some think the other preferable. But in any event, you propose to meet *costs* of illness, and most plain people think of meeting *costs* with *dollars*. They understand that. Years of experience with life and fire insurance have taught them. Thanks to the businessmen, who have made this plain, reasonably simple, and prompt.

And so medical care insurance to meet the *costs* of unexpected illness must be financially sound, must pay where needed with as little red tape as possible, and must satisfy a need of the consumer, at a *price* he can afford.

## Insure Your Self-Respect

We approach the time when, once every four years, the country works itself into a pre-election froth. Authentic polls of the voters tell us (up to the moment the ballots are counted) just what is going to happen. The simplest action of any public official is scrutinized for political significance. The newspapers and the radio become profound political oracles. And the elected representatives of the people mend fences furiously throughout the length and breadth of the land, so that no voter shall stray from the corral.

At such a time one is particularly impressed with the wisdom of medical leadership which, so far, has kept the profession free of political alliances or entanglements of any kind. Whatever party wins at the polls, whatever administration we may have to endure for another four years of broken promises, higher taxes, and gobbledygook, medicine at least can go about its business relatively unhampered by commitments to anybody but the sick. We say relatively because recently the fashion seems to be for

The medical profession thinks it has had sufficient experience with the plans which have been in experimental operation in this State for many years now, to be able to say that such voluntary insurance can be provided for the public.

Eventually, government will assist in the operation and furthering of such plans, in our opinion, rather than to operate its own scheme of compulsory "health" insurance disguised as social security or whatever seems at the moment to be politically expedient because, after all, government is only the people and the people get what they want in this country.

Eventually the people will want the kind of medical care insurance of which the doctors approve, if the doctors will advise the people about it, because the doctors have always dealt honestly with the people and the people respect that way of doing things. But the doctors will have to inform the people by every means at their disposal of the advantages of voluntary prepaid medical care.

political administrations to annoy the profession with proposals to come and play in the government backyard, and perhaps to dabble around a little with the boys at the public trough.

Fortunately, even though the public health is at a high level, there is still a great deal to do to improve it. This is our concern. It is a full-time job. And at the moment, election or no election, come hell or high water, an important part of that job is the promotion of voluntary medical expense indemnity insurance. It doesn't matter in the least what party wins the election. The country has magnificently survived and with patience endured all kinds—good, bad, or indifferent.

But unlike political administrations, medicine has to make good *all the time* or the people want to know "how come?" And the people will not take hokum for an answer.

The Medical Society of the State of New York is officially committed to the proposition of voluntary medical expense indemnity

insurance for the betterment of the individual and the collective health. It must make this system of self-respecting prepayment for medical care work with the help of the people themselves and free from political obscurantism. It will be quite a job, especially since we of medicine are short-handed; but no matter, we can do it and call it by its right name into the bargain.

Medicine is not hampered by the necessity for fence-mending, elections, or any commitment to compel anybody to do anything about medical indemnity insurance, or the "political angles" inherent in any government-controlled project.

When medicine deals directly with the people themselves on a voluntary basis there is safety and security for both.

## Diphtheria

During the last twenty years we have seen a marked decrease in the incidence of diphtheria concomitant with and undoubtedly conditioned by the increasing use of various artificial immunizing agents. But the protection level against diphtheria for any community may be taken as the summation of its natural and its artificial immunization levels, modified by the prevailing contact rate, population flux, crowding, and social interchange, as well as the virulence of the organism. As community experience with the disease decreases, it would seem that administration of diphtheria toxoid must increase to compensate for it.

In a special article in this issue, page 2138, Dr. Berwyn F. Mattison, M.P.H., discusses a recent small outbreak of diphtheria in a New York State community, with suggested

steps to maintain the necessary level of community protection. These include higher preschool protection rate, reimmunization of all children on entrance to school, administration of complete courses in every individual immunized.

Of special interest to school physicians, we recommend a thoughtful reading of this study by general practitioners in particular. If this situation is found with respect to diphtheria, what of the other communicable diseases?

More and more attention must be paid, apparently, to the mechanisms for specific prevention and the maintenance of a high level of immunity by artificial means if we are to avoid living under a sense of false security. More studies of this nature should be encouraged.

## Universal Military Training

It is with the utmost satisfaction that we note General George Marshall's directive to those planning America's postwar military policy. His advocacy of the fundamental principle of a citizens' army, based on universal service, will be supported, we feel, by all physicians, as the only democratic approach to the problem. The need for armed force adequate to keep the peace, or to meet war, should it come, will be obvious, we hope, to all, and particularly to the medical profession.

The physicians of the country have been especially privileged in being able to observe at first hand through their services to the draft boards and the examining teams at the induction centers, and their honorable service with troops in the field, the tragic results of unpreparedness and the necessity for

a continuing policy of universal military training.

The physicians will agree with Maj. Gen. Paul R. Hawley in his recent speech at the Cincinnati College of Medicine,<sup>1</sup> that the restoration to health in this war of about 97 per cent of our wounded is commendable. They have only done the job that was expected of them with the aid of the latest findings of medicine and all the resources of modern surgery. But this applies only to the wounded. Even modern medicine can do nothing for the dead, and relatively little for the broken in spirit who, though healed of their wounds, will remain for more years than we like to contemplate a living reproach to our recent national policy of unpreparedness, fatuous stupidity, and criminal neglect.

The blame for this lies squarely at the door of every citizen in the nation. Theirs the indifference, theirs the blame, theirs the "it can't happen here" attitude that put the myriad white crosses in U.S. military cemeteries twice in a quarter century. Theirs the pinch-penny squealing that has influenced their elected political representatives to deny necessary appropriations to the military and naval establishments. "As late as March of 1940," says Walter Lippmann,<sup>2</sup> "War Department estimates for a small number of replacement airplanes were cut by the House of Representatives to 57 planes." Theirs the blind stupidity that must never occur again. And yet it is to be expected that the corrosion of enemy propaganda will shortly begin to seep through its usual channels to undermine again and to destroy our resolution never again to be caught unaware and unprepared. This propaganda must be combated.

Physicians will be advised that a Citizens' Committee for Universal Military Training of young men has been in process of organization for some time. The Committee within the Second Service Command has already been organized to inform the public and to secure nation-wide support in favor of the promotion of useful citizenship and the unity and security of the United States.<sup>3</sup>

This will be good news to those medical men in the armed forces abroad and at home who are in a position to see for themselves the folly of neglect of universal military training. It is sincerely to be hoped that every medical man in the nation will uphold General Marshall's hands and do his or her part in every way, starting *right now*, to assist in supporting this program of training.

<sup>1</sup> Editorial: *New York Times*, Aug. 29, 1944.

<sup>2</sup> Walter Lippmann: *U.S. War Aims, Readers Digest*, Sept. 1944, p. 110, from the Biennial Report of the Chief of Staff of the U.S. Army, July 1, 1930-June 30, 1941.

<sup>3</sup> *Herald Tribune*, Sept. 3, 1944, p. 11.

## Make it Brief

As time wears on the help and energy which would have accrued to the several medical societies, county and state, becomes more conspicuous by its absence. The older men who are carrying on to the limit of their ability are finding their reservoir of force and available time depleted by the demands of their private practices and the increasing burden of their hospital and clinic work. Many have had no vacations; some but a few days. Responsibilities have multiplied.

Can something be done further to ease the accumulating burden on those physicians who serve the people and the medical societies gratuitously on the numerous committees of organized medicine? We think it can. Many of the meetings are too long-drawn-out.

True, something has been done to cut

the number of meetings to a minimum, but we contend that in many instances they are still too long-drawn-out. Freedom of speech can be lost through abuse of the right as well as in other ways possibly less painful.

Agenda of meetings might frequently be cut with much benefit in conservation of busy physicians' time. Discussions might often be briefer with no loss to the subject under consideration. Presiding officers, by holding speakers and discussants strictly to the point, could be a great help.

Many of our meeting habits have been acquired in former times when leisure was more than a word in the dictionary. Those times will doubtless return one day. But, in the meantime, make it brief.

The less you say today, the less you may have to take back tomorrow.

## Erratum

The editorial entitled "Poliomyelitis" appearing on pages 1760 and 1761 of the August 15 issue of the *JOURNAL*, in the letter of Dr. James E. Perkins, on page 1761, column two, line eighteen read "possible" for "impossible." It is regrettable that this error has changed the meaning and we reproduce the entire sentence in its proper sense herewith:

"I think it is important, therefore, to have the physicians throughout the State aware of these

changes, and that the reason for the changes is that it has become increasingly clear that in view of the large number of nonparalytic cases of the disease, which will never be recognized as cases of poliomyelitis infection, and thus can never come under governmental restriction although perfectly capable of spreading the infection, it is impossible to control the spread of the infection through government regulation."

# PROBLEMS OF TREATMENT OF TROPICAL DISEASES IN RETURNING MILITARY PERSONNEL

HENRY E. MELENBY, M D, New York City

THE most important problems in the treatment of tropical diseases in returning military personnel, as seen at the present time, are malaria and filariasis. Other common diseases which may be encountered with varying frequency are amebiasis, bacillary dysentery, hookworm, and other intestinal worms and protozoa. Isolated cases of visceral or cutaneous leishmaniasis, African trypanosomiasis, schistosomiasis, and leprosy may appear. It is not likely that cases of cholera, plague, yaws, relapsing fever, louse-borne typhus, mite-borne typhus, or yellow fever will be brought into the country.

## Malaria

The treatment of malaria in returned military personnel has two principal aspects, first, the treatment of relapses of vivax (tertian) malaria, and, second, the recognition and treatment of early cases of falciparum (estivoautumnal) malaria.

The relapses of vivax malaria occur mainly in troops who have taken quinacrine (atabrine) as a suppressive measure in forward combat zones where malaria is hyperendemic, and where other malaria control measures have been impossible. Neither quinacrine nor quinine is a true prophylactic against malaria. They have no up parent action against the sporozoite introduced by the mosquito, but merely suppress the infection after the parasites have entered the red blood cells. It seems probable that many falciparum infections are entirely eliminated by suppressive treatment with quinacrine, but most, if not all, of the persons infected with vivax develop clinical malaria within a few weeks after suppressive treatment is discontinued. This seems to be a reasonable explanation of the fact that, although falciparum infection is much commoner than vivax in most parts of the tropics, most of the clinical cases of malaria in our troops who have taken suppressive treatment in those areas are caused by vivax. It is well known that vivax infections relapse much more commonly and repeatedly than falciparum infections. Some of our returned troops have had ten or more relapses, and some of them will undoubtedly be discharged to civilian life and have later relapses.

The reason why vivax infections are so often

not eliminated by the usual course of therapeutic treatment is not yet known. Either the asexual cycle continues in tissues such as the spleen pulp where drugs cannot reach the parasites in sufficient concentration, or there is an exocytrocytic cycle in the reticuloendothelial cells, such as has been described in certain species of bird malaria, and which is resistant to our present antimalaria drugs. It is also possible that when cases are treated as soon as symptoms occur specific antibodies do not have time to develop and assist in eradicating the infection.

Despite the recently announced synthesis of quinine, this drug is not likely to be available for several years for the treatment of malaria by mouth, and quinacrine must be depended upon chiefly. Quinacrine, like quinine, affects mainly the asexual parasites which cause the symptoms of the disease. The course of treatment which was originally advocated was 0.1 Gm. three times a day for five to seven days. Recent studies have shown, however, that although quinacrine is quickly absorbed from the intestine it is rapidly taken up by the fixed tissues, and does not reach an effective concentration in the blood plasma and red cells until the tissues are fairly well saturated. For this reason it is now advocated that quinacrine be given initially in doses of 0.2 Gm. every six hours for five doses in order to raise the blood concentration to an effective level, and that this be followed by 0.1 Gm. three times a day for the succeeding six days. Since quinacrine is eliminated from the body very slowly, it is effective for several days after treatment is discontinued. If patients relapse after such a course of treatment it may be advisable in a subsequent relapse to continue the 0.2 Gm. dosage every six hours for six to eight doses or to continue the 0.1 Gm. dosage three times a day for two to three weeks.

Toxic symptoms from quinacrine have been observed, strange to say, mainly when it is administered in small doses for suppressive treatment rather than in full therapeutic doses. These symptoms consist of nausea, vomiting, and diarrhea when troops are on active duty. The yellow discoloration of the skin from therapeutic doses is not jaundice, but is due to the deposition of the acridine dye, and can be ignored. The only other toxic symptoms are very rare mental disturbances. If these occur, quinine should be substituted in treatment.

The use of plasmochin to supplement quin-

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 11, 1944.  
From the Department of Preventive Medicine, College of Medicine, New York University.



acrine or quinine has not proved to be of significant value in our armed forces, and since it is dangerously toxic its use is to be discouraged.

Totaquine, which contains a small percentage of quinine supplemented by the other three alkaloids of cinchona—namely, quinidine, cinchonine, and cinchonidine—is practically as effective as quinine for oral medication. It has been adopted by the *United States Pharmacopoeia*, but is not yet generally available. If it does become available it can be used effectively in doses of 0.6 Gm. three times a day for seven days. Some relapse cases may require the continuation of treatment at one half of this dosage for two to three weeks.

Practically the only indication for parenteral therapy in malaria is acute falciparum infection.<sup>1</sup> If the parasite count is above 50,000 per cubic millimeter of blood, or if the clinical symptoms are severe in the presence of a lower parasite count, immediate parenteral treatment should be instituted. Such cases are not likely to be seen in troops discharged to civilian life, but they have been seen in individuals returning from overseas by air, who have become infected just before leaving the tropics and have developed their first symptoms after arrival in this country. The onset of these cases is often insidious, with coryza, mild malaise, or diarrhea, and they have sometimes progressed rapidly into coma before being recognized. Physicians must be on the alert to suspect such cases and to make repeated blood examinations at frequent intervals. In such cases quinacrine dihydrochloride in solution may be administered intramuscularly in simultaneous doses of 0.2 Gm. in each buttock, and the dose may be repeated at intervals of eight to twelve hours if the condition remains serious. Treatment by mouth should be started as soon as possible according to the schedule outlined above in order to maintain a high blood level. Quinine dihydrochloride in solution is still available, and may be preferred. It is probably best to administer it intravenously in doses of 0.5 Gm. diluted with 200 cc. of normal saline solution, glucose, or plasma. The infusion must be given slowly and the blood pressure must be watched carefully, since quinine may cause it to fall. If the systolic pressure is below 100 it may be advisable to administer epinephrine before giving quinine intravenously, or the epinephrine may be given in the infusion with the drug. A concise discussion of the treatment of malaria is presented in Circular Letter 153, issued by the Surgeon General of the Army and published in the *Journal of the American Medical Association* for September 25, 1943.<sup>2</sup>

In order to obtain accurate diagnosis of the species of malaria parasite involved and an

estimate of the intensity of the infection, physicians should have access to a laboratory in which the technicians are well trained in both thin-smear and thick-drop blood examinations. Both a thin-smear and a thick-drop preparation should be made in every case, either on the same slide or on separate slides, and the physician should be sure that these are made in the most approved manner so that examination will be reliable. The thick-drop preparation is particularly valuable in relapses or patients with mild symptoms in whom the parasites may be few, and also in acute falciparum infections where most of the parasites may be stuck to the walls of capillaries. Technicians should receive special training in the best staining methods and in the identification of parasites in thick-drop preparations, in which the blood has been hemolyzed and the parasites are more difficult to identify. Every laboratory should possess Bulletin No. 180 of the National Institute of Health, entitled "Manual for the Microscopical Diagnosis of Malaria in Man." This can be obtained from the Superintendent of Documents in Washington, D.C., at a cost of 30 cents.

### Filariasis

The problem in the treatment of filariasis caused by *Wuchereria bancrofti* is primarily the lack of a drug which is effective against this worm. The adult worm inhabits the lymph vessels and lymph nodes and causes attacks of acute lymphangitis which may ultimately lead to lymphatic obstruction and elephantiasis. Several hundred of our troops have become infected, particularly in certain islands of the South Pacific, and have been invalided home because of acute lymphangitis or lymphadenitis or involvement of the lymph vessels of the scrotum. These symptoms often appear as early as three months after infection, when the adult worms are still immature. The attacks are accompanied by fever and redness, swelling, and pain of the part involved. They last for a few days and usually recur at intervals of a few weeks. They appear to be an allergic phenomenon due to the presence of the worm. In native patients with local abrasions of the skin hemolytic streptococci have been suspected of contributing to the acute manifestations.

Most patients who are removed from the endemic areas in order to avoid repeated infection never develop elephantiasis, and it is hoped that this will be the case in our troops. There is a strong psychologic factor involved, in that infected patients have seen elephantiasis of the scrotum and legs in natives of the endemic areas, and fear impotence and deformity in their own cases. They may be assured that impotence

will not occur, and that deformity is very unlikely to develop.

Diagnosis in early cases is mainly based upon symptoms, since the worms are immature and no microfilariae are found in the blood. A few cases have been confirmed by finding young worms in lymph nodes removed at biopsy. Some patients will probably have recurrences of the acute manifestations after discharge from military service, and will come under the care of civilian physicians. In a few individuals microfilariae may later be found in the blood without any previous history of lymphangitis. Some such cases have been discovered in Puerto Ricans examined for admission into the armed forces. In some parts of the world the microfilariae have a definite nocturnal periodicity in their appearance in the blood stream, while in other areas there is a diurnal periodicity or larvae may be found at any time of the day or night.

Search is now being made for a drug to cure this infection. Preliminary observations with an organic antimony preparation are encouraging, and other preparations are being explored. Even if no effective chemotherapy is discovered, it is very unlikely that new endemic foci of filariasis will be established in this country. The only one which has ever existed was in and about Charleston, South Carolina, and this has apparently died out within recent years because of mosquito control. Although the worm can be transmitted by several genera of mosquito, a large human reservoir and an abundance of mosquito vectors are necessary to maintain transmission.

### Other Common Tropical Diseases

Amebiasis or infection with *Endamoeba histolytica* is present throughout almost the entire world. The chief danger in connection with our armed forces is that certain strains of the ameba acquired in the tropics may have a higher degree of pathogenicity than most of the strains present in this country, and that infected troops may develop acute amebic dysentery or liver abscess after they are discharged from military service, or that they may transmit the infection to other members of their families or, through polluted water, to larger groups of people. The tendency of amebiasis to become chronic and resistant to chemotherapy and the functional disturbance which may follow scarring of the intestine may present problems to civilian physicians. Liver abscess may occur months or years after the infection is acquired without any previous history of clinical dysentery. In the treatment of amebiasis emetine hydrochloride has been depended upon too greatly in the past. Although very effective in overcoming acute symptoms, it acts

only on tissues which are furnished with a good blood supply, and probably has little effect on amebae in the lumen of the intestine. It is also toxic to the heart muscle, and many persons have suffered permanent damage to the heart from excessive use of this drug. It should be administered intramuscularly, never in doses exceeding 60 mg per day, and rarely, if ever, longer than six days at a time. It is wise to follow the patient with the electrocardiogram before and at intervals during treatment and to stop treatment if any changes occur. Emetine is necessary in amebic hepatitis and liver abscess, and should be started as soon as a diagnosis is made. Sometimes its early use makes surgical intervention unnecessary. In any case, it is advisable to administer emetine, if possible, for three or four days before drainage is instituted, in order to stop the progress of the infection. Drainage of a liver abscess by cannula is much to be preferred to an open operation. In acute amebic dysentery it is usually necessary to administer emetine only for the first three or four days, and treatment by mouth should be started at the same time, using one of the iodine preparations, namely, chiofon, vioform, or diodoquin, or the arsenic preparation, carbarsone, in order to eliminate the intestinal infection. These preparations can be administered for ten days at a time, and it is wise to alternate them for two or three consecutive courses in order to avoid relapses.

The diagnosis of amebiasis is often a difficult technical procedure. Laboratory technicians must be well trained in the differentiation of *Endamoeba histolytica* from the nonpathogenic amebae and from body cells. Specimens should be examined as soon as they are passed and concentration methods for cysts should be employed both in original diagnosis and in follow up. It is wise for the physician to assure himself of a correct diagnosis before instituting treatment, as other serious diseases are often mistaken for amebiasis.

Bacillary dysentery is one of the commonest diseases of the armed forces in camps in this country and in the tropics. Fortunately, most of the cases have been relatively mild, and the severe Shiga strain has rarely been encountered thus far. With the advance of our troops into other occupied areas under combat conditions this strain may be encountered more frequently. Fortunately also, the sulfonamide drugs have proved to be very effective against bacillary dysentery, so that chronic cases are much less likely to develop with the use of these drugs. Symptomless carriers occur in considerable numbers in the presence of an epidemic, and a few of these carriers may harbor the infection after return to civilian life, and give rise to sec-

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Practically the only indication for parenteral therapy in malaria is acute falciparum infection.<sup>1</sup> If the parasite count is above 50,000 per cubic millimeter of blood, or if the clinical symptoms are severe in the presence of a lower parasite count, immediate parenteral treatment should be instituted. Such cases are not likely to be seen in troops discharged to civilian life, but they have been seen in individuals returning from overseas by air, who have become infected just before leaving the tropics and have developed their first symptoms after arrival in this country. The onset of these cases is often insidious, with coryza, mild malaise, or diarrhea, and they have sometimes progressed rapidly into coma before being recognized. Physicians must be on the alert to suspect such cases and to make repeated blood examinations at frequent intervals. In such cases quinacrine dihydrochloride in solution may be administered intramuscularly in simultaneous doses of 0.2 Gm. in each buttock, and the dose may be repeated at intervals of eight to twelve hours if the condition remains serious. Treatment by mouth should be started as soon as possible according to the schedule outlined above in order to maintain a high blood level. Quinine dihydrochloride in solution is still available, and may be preferred. It is probably best to administer it intravenously in doses of 0.5 Gm. diluted with 200 cc. of normal saline solution, glucose, or plasma. The infusion must be given slowly and the blood pressure must be watched carefully, since quinine may cause it to fall. If the systolic pressure is below 100 it may be advisable to administer epinephrine before giving quinine intravenously, or the epinephrine may be given in the infusion with the drug. A concise discussion of the treatment of malaria is presented in Circular Letter 153, issued by the Surgeon General of the Army and published in the *Journal of the American Medical Association* for September 25, 1943.<sup>2</sup>

In order to obtain accurate diagnosis of the species of malaria parasite involved and an

estimate of the intensity of the infection, physicians should have access to a laboratory in which the technicians are well trained in both thin-smear and thick-drop blood examinations. Both a thin-smear and a thick-drop preparation should be made in every case, either on the same slide or on separate slides, and the physician should be sure that these are made in the most approved manner so that examination will be reliable. The thick-drop preparation is particularly valuable in relapses or patients with mild symptoms in whom the parasites may be few, and also in acute falciparum infections where most of the parasites may be stuck to the walls of capillaries. Technicians should receive special training in the best staining methods and in the identification of parasites in thick-drop preparations, in which the blood has been hemolyzed and the parasites are more difficult to identify. Every laboratory should possess Bulletin No. 180 of the National Institute of Health, entitled "Manual for the Microscopical Diagnosis of Malaria in Man." This can be obtained from the Superintendent of Documents in Washington, D.C., at a cost of 30 cents.

### Filariasis

The problem in the treatment of filariasis caused by *Wuchereria bancrofti* is primarily the lack of a drug which is effective against this worm. The adult worm inhabits the lymph vessels and lymph nodes and causes attacks of acute lymphangitis which may ultimately lead to lymphatic obstruction and elephantiasis. Several hundred of our troops have become infected, particularly in certain islands of the South Pacific, and have been invalided home because of acute lymphangitis or lymphadenitis or involvement of the lymph vessels of the scrotum. These symptoms often appear as early as three months after infection, when the adult worms are still immature. The attacks are accompanied by fever and redness, swelling, and pain of the part involved. They last for a few days and usually recur at intervals of a few weeks. They appear to be an allergic phenomenon due to the presence of the worm. In native patients with local abrasions of the skin hemolytic streptococci have been suspected of contributing to the acute manifestations.

Most patients who are removed from the endemic areas in order to avoid repeated infection never develop elephantiasis, and it is hoped that this will be the case in our troops. There is a strong psychologic factor involved, in that infected patients have seen elephantiasis of the scrotum and legs in natives of the endemic areas, and fear impotence and deformity in their own cases. They may be assured that impotence

# PERIARTHRITIS OF THE SHOULDER JOINT

## Classification, Pathology, and Treatment

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**PERIARTHRITIS** of the shoulder, or its more descriptive synonym, "frozen shoulder," may be induced by a wide variety of surgical and medical conditions. Our interest in this paper, however, lies mainly in the medical phases of periartthritis as well as in those surgical entities which enter into the picture and which are ultimately capable of leading to this disability.

In the past, periartthritis of the shoulder has been dealt with chiefly as an orthopedic entity. That it is of equal interest to the medical man, however, is attested to by the similarity of the so called primary form of periartthritis to the rheumatic syndrome. The frequency with which patients suffering from painful shoulders present themselves in various arthritis clinics throughout the country, the number of dissimilar, if not bizarre, diagnoses made, and the interest that these cases present from a medical standpoint, make it incumbent upon the medical man to have a workable understanding of this condition.

Of the entities which involve the shoulder joint, periartthritis, perhaps, has the distinction of being the most confusing. This confusion is reflected in its many phases: arthritis, rheipathic monarticular arthritis,<sup>1</sup> neuritis, bursitis, subdeltoid bursitis,<sup>2</sup> subacromial bursitis,<sup>3</sup> adherent subacromial bursitis,<sup>4</sup> "frozen shoulder,"<sup>5</sup> periarticular fibrositis, tendinitis of the short rotators,<sup>6</sup> primary tendinitis,<sup>7</sup> obliterative subacromial bursitis,<sup>8</sup> peritendinitis calcarea,<sup>9</sup> and Duplay's disease.<sup>10</sup>

Both Codman's and Wilson's approach<sup>9</sup> to this entity reflect the uncertainty surrounding its cause and its pathology. Codman in "Tendinitis of the Short Rotators," prefaces his chapter as follows: "This is a class of cases which I find difficult to define, difficult to treat and difficult to explain from the point of view of pathology." In the same vein Wilson<sup>9</sup> prefaces his paper with a similar statement: "It is with trepidation that the last entity is introduced. It is the so called 'periartthritis' or 'tendinitis' or 'frozen shoulder'." My own particular reaction in speaking of this condition is very much akin to that of Codman and Wilson.

## Classification of Periartthritis

As already mentioned, the term periartthritis is very loosely applied and is representative of any

number of shoulder conditions accompanied by pain and functional limitation. The result is almost Babylonian confusion. It is believed, however, that we are here dealing with a definite clinical entity and that the term "periartthritis" should be applied only on the basis of certain clinical and pathologic criteria, and not solely on pain and limited mobility.

As a case in point, the picture described by Dickson and Crosby<sup>10</sup>—pain and loss of function accompanied by limitation of motion—does not necessarily indicate periartthritis. An immediate injury to the shoulder is often followed by partial loss of function and limited mobility. This may be merely the result of pain and spasm, no fibrosis, tendinitis, or other organic pathology exists. By the same token, calcification, partial rupture of the supraspinatus tendon, and bursitis may each precede and ultimately lead to periartthritis, but they are not periartthritis. It is important, therefore, that in referring to any given shoulder condition we all speak the same language. This common language, as in all human intercourse, is the primary basis of understanding.

Study of this condition, as well as the literature thereon, points to two separate forms or groups of periartthritis (Groups I and II), each having certain distinct causative and pathologic characteristics.

Since the causative factors in one group (Group I) are still in doubt, a more concise terminology is suggested: primary periartthritis (periartthritis of uncertain origin). Conversely, since cases falling in the second group (Group II) follow a more or less definite causative sequence, the term "secondary periartthritis" (periartthritis of known origin) is proposed.

It is believed that the confusion existing in this symptom complex is partially the result of failure to differentiate between these two forms of the disease. That this differentiation is not merely of academic importance is substantiated by clinical, causative, and therapeutic differences. Militating against this distinction are those cases in which no causative or pathologic differences can be made out.

As a variant, a corresponding terminology of metabolic periartthritis and traumatic or mechanical periartthritis, respectively, might be substituted for these two forms of the disease.

The term "metabolic," however, is too circumscribed for a condition the exact cause of which is as yet in doubt. This term would likewise ex-

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clude infectious or toxic causes. The same criticism may be applied to the term "traumatic" or "mechanical," since not all cases of periarthritis falling in Group II are the result of trauma or mechanical irritation of the subacromial bursa by a ruptured calcium deposit in the supraspinatus tendon.

All in all, the terminology described above, though having certain inherent faults, might aid in clarifying a common and involved clinical situation.

### **Primary Periarthritis {Periarthritis of Uncertain Cause}**

1. Onset related to no immediately demonstrable cause.
2. Supraspinatus tendon and subacromial bursa not primarily involved.
3. Supraspinatus calcium deposit usually absent.
4. Trauma, whenever present, relatively insignificant.
5. Systemic predisposing factors present and predominant.
6. Initial pathology mostly confined to periarticular tendons (spasm and fibrosis).
7. Terminal pathology (extensive periarticular fibrositis) involving tendons, muscles, capsule, and other structures.

### **Secondary Periarthritis {Periarthritis of Known Cause}**

1. Onset frequently related to trauma.
2. Initial pathology usually in supraspinatus tendon and subacromial bursa (calcification, inflammation, and formation of adhesions).
3. Presence of preceding degenerative changes in supraspinatus usually noted.
4. Systemic factors not present nor predominant.
5. Pathology involving one, several, or all of following structures present: supraspinatus, subacromial bursa, capsule, periarticular tendons.

Codman, in his book, *The Shoulder*,<sup>1</sup> devotes one whole chapter to periarthritis, "Tendinitis of the Short Rotators," and part of another, "Arthritis, Periarthritis, and Bursitis of the Shoulder Joint." In the former he refers to what I have here called primary periarthritis as essentially a tendinitis, with only secondary involvement of the bursa. He also refers to it as adherent subacromial bursitis or "frozen shoulder." In the latter chapter he speaks of it as a periarthritis. Whereas Codman separates this entity into two apparently distinct groups, this distinction is somewhat hazy, at times difficult

to follow, and the nomenclature somewhat confusing.

P. D. Wilson's exposition of this subject<sup>5</sup> comes closest to my interpretation of the clinical and pathologic picture that we are called to deal with. Wilson recognizes a distinct symptomatology for primary periarthritis in what he describes under the simple title of "Periarticular Adhesions (Tendinitis)" and feels that "there can be no doubt that we are here dealing with a separate disease entity." Under "treatment" he refers to it as a primary tendinitis. The gap between primary tendinitis and primary periarthritis is a small one.

### **Primary Periarthritis**

Little is known of the exact cause or nature of the pathologic changes in this condition. The clinical picture and what is known of its cause and its pathology, however, point to a separate and distinct disease entity.<sup>5</sup> X-ray is usually negative, though in certain instances several flecks of calcium deposit in the supraspinatus tendon have been found.<sup>5</sup> Operation fails to reveal any calcification of the supraspinatus tendon, adhesions around the subacromial bursa, or partial rupture of the collagenous fibers of the supraspinatus.<sup>1,5</sup> A history of trauma is absent, vague, or not clearly associated with the onset of symptoms. Physical examination fails to reveal any swelling or focal point of tenderness, though there may be generalized sensitiveness about the shoulder. Active and passive extension, abduction, and rotation are markedly restricted. Attempt to elevate or abduct the arm by sheer force results in considerable pain. Scapulohumeral motion is frequently absent. Manipulation under anesthesia results in audible sounds of snapping adhesions followed by complete freeing of shoulder movements.<sup>5</sup>

Onset is usually gradual and preceded by a history of a painful catch in the region of the greater tuberosity. In time the patient becomes aware of a sense of stiffness in the shoulder, accompanied by restricted motion.<sup>5</sup> In certain instances pain is completely lacking, the patient becoming aware of his condition by an increasing sense of disability. Some patients have little restriction and much pain; others have stiff, painless joints with varying degrees of pain and disability ranging in between.<sup>1</sup> Pain is often increased at night and is aggravated by pressure caused by lying on the affected shoulder. This night pain is often compared to that of a dull toothache. Ofttimes the patient consults a physician not because of the pain, which may be bearable, but because of inability to elevate the arm. In several of my cases extension was limited to the point of making it impossible to board a bus or trolley.

### Cause of Primary Periarthritis

That an important systemic common denominator prevails in this form of periarthritis is suggested by its relation to sex, age, occupation, and menopause.

It is significant that it is more common in women of the so-called leisure class, whereas secondary periarthritis is more commonly seen in laborers.<sup>1</sup> According to Codman's studies 58 per cent occurred in women, the average age in 100 patients treated being 53 years. It is also significant that it is rarely encountered in young persons under 25. This is suggestive of physiologic or metabolic imbalance as a causative factor.<sup>10, 11</sup> An equally important factor, as in so-called osteoarthritis of the menopause, is that of estrogen deficiency.<sup>12</sup> The importance of hypothyroidism is also worthy of note and may have similar implications here. This relation of hypothyroidism to the rheumatic syndrome has been stressed by Dunn.<sup>13</sup> Toxemia of bacterial or nonbacterial origin has also been implicated in both forms of periarthritis.

A parallel to contraction of the short rotator group and other muscles in this condition is commonly seen in rheumatoid arthritis. In the latter, disability of the shoulder, ulnar deviation, contraction of the hamstrings with flexion deformity in the knee are perhaps all suggestive of the effect of a systemic irritant which causes the muscles and tendons to contract. Contracture also insures a position of ease for the joint, this, in time, may be followed by actual shortening.

Further evidence in favor of a systemic cause is the average of spontaneous improvement within two years,<sup>1</sup> the value of bed rest alone as a therapeutic aid, absence of a distinct traumatic history, occasional bilateral involvement, probable higher incidence in the left shoulder,<sup>5</sup> and the consecutive involvement of both shoulders.

As to pathogenesis, a conditioning of the periarthritic structures might be assumed, as a result of which nature, in an effort to ward off pain and injury, insures a position of ease by limiting mobility. This is the anatomic position in which the arm hangs naturally down on the side of the body and in which the joint is really in a state of flexion. Thus "tendinitis" or contraction of the periarthritic ligaments and finally fibrosis, occurs. It is a protective mechanism frequently seen in proliferative arthritis as well, in such joints as the shoulder, elbow, wrist, knee, and sometimes those of the foot, one which in time assumes a parapsysiologic or purposeless role.

In my observation of a substantial number of acute cases of painful and disabled shoulders, I have been amazed at the rapidity of the involvement of the muscles surrounding the shoulder.

Within a relatively short period of the date of onset the degenerative-inflammatory-fibrotic process had involved the tendinous insertions. Codman,<sup>1</sup> Dick, Hunt, and Ferry<sup>14</sup> noticed atrophy of the spinatus muscles if the symptoms lasted more than a few weeks.

### Pathology of Primary Periarthritis

It has been pretty well proved pathologically that we are not dealing here with an arthritis. Outright exclusion of this type of periarthritis from the group of rheumatic entities is not possible at this time, however.

Codman<sup>1</sup> refers to this group as a tendinitis of the short rotators. However, evidence points to the fact that other tendons are involved, as well as the capsule, ligaments,<sup>9</sup> and perhaps even the muscles. The pathology, in advanced cases, therefore, is undoubtedly extensive, involving all or most of the structures forming the shoulder girdle. Analysis of the reports of Codman,<sup>1</sup> Brickner, Carnett, and Harbin<sup>15</sup> shows that even in secondary periarthritis, with excision of the bursa or removal of the calcified deposit, adhesions, when present, must be broken by manipulation before the arm can be brought into abduction and external rotation.<sup>4</sup> The exact location of these adhesions, however, has, according to Wilson,<sup>5</sup> never been definitely ascertained.

Wilson,<sup>5</sup> with his finger in the bursa, manipulated three of these shoulders and felt the snapping of adhesions in the capsular structure beneath his finger and anteriorly in the region of the subscapularis tendon. He is of the opinion that the adhesions lie in the substance of the tendinocapsular structure, whence they may extend to involve either underlying or overlying tissues. Like Codman, he is of the opinion that the process probably starts as a tendinitis which on subsiding leaves a thickened, inelastic capsule adherent, beneath, to the edges of the articular cartilage and above, to the adjacent soft tissues.

Wilson is not sure whether this tendinitis is a true inflammatory process due to low grade infection or, as he expresses it, "still another manifestation of the attritional and degenerative changes to which this structure (the supraspinatus tendon) is particularly liable."

Codman's designation of this condition as adherent subacromial bursitis would lead us to believe that the bursa is either primarily involved or, at least, involved most of the time. This has not been substantiated either by Codman himself or by other students of this condition.<sup>5, 9</sup> Wilson<sup>5</sup> explored the subacromial bursa with disappointing findings. In only one case was the bursa obliterated by adhesions. In two cases the appearance of the bursa was fairly normal, although it seemed small. In one other case the

bursa appeared normal, but the tendinocapsular cuff lying beneath it was of a uniform red color, indicating extensive hyperemia. He was, therefore, led to believe that this was an early case with the inflammatory process still present and active.

Kendrick<sup>3</sup> mentions the pathologic changes observed by Duplay on necroscopy in a 53-year-old man who died of pneumonia and whose shoulder had been manipulated two months before his death. On the affected side the deltoid was paler than normal; the subdeltoid tissue was fibrous, exhibiting dense bands running to the upper end of the humerus. The subacromial bursa was obliterated. The tendons of the supraspinatus and infraspinatus had lost their polish, as had also the inferior surface of the acromion. It was inferred that the chief lesion was in the subacromial bursa, with extension to neighboring structures. Under the inferior surface of the deltoid could be seen ruptured adhesions. The articular capsule was somewhat thickened but the articular surfaces were normal.

According to Kendrick<sup>3</sup> the major adhesions seem to be over the inferior and anterolateral aspects of the joint. Some of these adhesions are broken as the arm is abducted and externally rotated; others, as the arm is internally rotated.

In seven patients operated upon by Bosworth<sup>6</sup> massive, obliterating adhesions requiring sharp dissection were found. These adhesions were unusually dense about the subscapularis tendon.

It is my belief, from a study of these cases, that the tendinous or the musculotendinous structures are first involved. Degeneration, inflammation, and disuse result in a fibrotic process which subsequently extends to the capsule, the ligaments, and even the muscles. In short, we are here really dealing with a periarticular fibrositis. This fibrotic process is probably on a rheumatic or toxic basis and may be abetted by a number of coexisting factors both systemic and local, viz., metabolic imbalance, glandular dyscrasia, focal infection, toxemia, repeated subminimal trauma, disturbed circulation,<sup>10</sup> one or all of which may be present.

This tallies with Dickson and Crosby's concept of "a common underlying alteration in the physical state"<sup>10</sup> and Codman's evolutionary theory of mechanical disadvantage.<sup>1\*</sup> Therefore, because of its peculiar anatomy,<sup>†</sup> during fibrosis

this joint tends to become fixed in a position of ease. There are many such parallels in the human body in which fibrosis is localized in certain areas or groups of muscles.<sup>16</sup> The shoulder, because it is naturally in a state of flexion, tends to become immobilized in this position. It may very well be that an ordinarily intangible rheumatic process commonly known to the rheumatologist may be the common denominator in many such apparently unrelated processes.

Of the muscles and tendons taking part in this clinical syndrome I have been able to find little mention in the literature. Codman<sup>1</sup> fleetingly refers to an inner and outer group of muscles but does not stress their pathology. The inner group, most commonly involved, according to this investigator, comprises the short rotators; the outer group, only occasionally involved, the deltoid, the pectorals, and the teres major. Pinner and Staderman<sup>7</sup> also allude to an inner and outer group as controlling motion of the shoulder, but fail to mention their role in this condition.

Study of the "frozen shoulder," the anatomy of the muscles, and their relation to the bony parts to which they are attached, leads me to concur in the belief that, specifically, two groups of muscles and their tendons are involved: an inner group comprising the supraspinatus, infraspinatus, teres minor, and subscapularis; an outer, comprising the deltoid, pectoralis major, latissimus dorsi, and long head of the triceps. These structures, however, may not all be involved at the same time.

The inner group of muscles, arising from the scapula and their fasciae, stretch laterally to the humerus to be inserted into the greater or lesser tuberosity.<sup>17</sup> These short rotator tendons are, likewise, all attached to the capsule of the shoulder joint.<sup>1,5,9,17</sup> Contraction or fibrosis of these structures would, as is demonstrable by a study of the figures here presented, tend to bind or immobilize the humerus against the glenoid and inhibit scapulohumeral motion. The teres major, similar in its origin and mechanics to this inner group, also appears to play a related role in pathology.<sup>1</sup> Of the outer group, the pectoralis major, the latissimus dorsi, and the long head of the triceps are most frequently involved. The deltoid, though commonly atrophied, in my opinion, rarely inhibits mobility. The remaining muscles of this group arise mainly from the trunk (latissimus dorsi), the thorax and clavicle (pectoralis major), and the infraglenoid tuberosity (long head of the triceps), and stretching laterally, are inserted into the upper third of the humerus (pectoralis major and latissimus dorsi). The long head of the triceps, together with its lateral and medial head, is inserted into the olecranon.

\* According to Codman, the quadruped uses his supraspinatus to accelerate a pendulum, while in man, in raising the arm, this muscle acts at a disadvantage against gravity and therefore under great strain.

† "Man has a relatively large and powerful acromion process to act as the mast of a derrick, to which his enormously developed deltoid is attached, and under which a relatively small supraspinatus is chiefly useful in holding the boom (humerus) on the fulcrum (the glenoid)."—Codman

Analysis of the origin and insertion of these two groups points to a system of muscles or levers controlling movements of the shoulder. The nature of these movements depends on their origins and insertions, or, in short, in which direction their forces are exerted. Contraction of the inner group limits mobility by pulling the head of the humerus toward the glenoid, their contractile force operating between their origin in the scapula and their insertion in the humerus. In the outer group traction is exerted mainly between the trunk and thorax and the upper third of the humerus, or, in the case of the long head of the triceps, between the glenoid and the olecranon. In order to understand the role of these muscles in the "frozen shoulder" one must visualize a system of forces operating from the spine, scapula, and thorax and pulling the humerus medially. On active or passive motion of the arm an opposing pull is exerted, but this is neutralized by the existing fibrosis and musculo-tendinous traction exerted in the opposite direction and tending to keep the shoulder in a position of flexion.

That the structures enumerated are involved in this condition has in part been borne out by a number of investigators. Perhaps the most convincing proof is study of the patient himself. On attempted extension, with the patient supine, both the latissimus dorsi and the pectoralis major stand out in relief, the latissimus dorsi laterally and the pectoralis major medially. The long head of the triceps may be felt in the axilla between these two muscular prominences as a hard, constricting band under the finger. Involvement of the inner group, excepting for the deltoid, is not as readily demonstrable. On attempted motion of the arm, however, it is found that both the scapula and the arm move as one due to contraction and fibrosis of the short rotators. I have also been able to prove involvement of these structures to my satisfaction by the repeated injection of procaine into the muscles or tendons themselves. This procedure, followed by manipulation, has frequently led to full use of the arm. Similarly convincing results have been obtained by the supraclavicular brachial plexus block.<sup>18</sup> In certain instances where the latter procedure was employed full motion was established immediately after injection. Such results were undoubtedly due to relaxation of spasm before the onset of fibrosis, however. When fibrosis had already been established adhesions were broken by gentle manipulation of the arm.

### Secondary Periarthritis (Periarthritis of Known Cause)

The causative factors underlying secondary periarthritis are more or less apparent and follow,

as a rule, a rather logical sequence of degeneration, trauma in the supraspinatus, formation of protective adhesions in and about the bursa, contraction and atrophy of the short rotators and of the outer group of muscles and tendons.

The starting lesion here is often in the tendon of the supraspinatus. A minor injury to already degenerated tissues, rupture of several of the fibers of the supraspinatus, often completely overlooked by the patient, may be sufficient to initiate the process of adhesions, protective spasm, and "frozen shoulder."

One of the better-known causes in this group is calcification of the supraspinatus tendon with rupture of the calcified deposit into the subacromial bursa. This initiates an inflammatory reaction in the bursa, which, by virtue of its power to form adhesions, becomes adherent to the surrounding structures. Pain induced by the bursitis results in spasm of the surrounding tendons. Inflammation, pain, spasm, and disuse finally lead to atrophy, fibrosis, and disability. Injury, which frequently precedes secondary periarthritis, may be valid and capable of inducing subsequent disability, or, as in primary periarthritis, may be insignificant in nature, and out of all proportion to the pain and subsequent discomfort which it arouses. In this latter instance, however, it is strongly suspected that a degenerative process, particularly in the supraspinatus tendon, precedes the somewhat inconsequential trauma.

Pinner and Staderman mention the work of Case and Carnett, who found in 26 cases that the sequence of changes in the tendon appeared to be first a primary interference with the blood supply, then ischemia and resultant necrosis. Calcium salts were later deposited in the necrotic tissue. In many instances, but not all, an inflammatory reaction was subsequently excited. This inflammatory reaction varied in degree from extensive formation of granulation tissue to the scattered infiltration of a few pus cells.

Codman,<sup>1</sup> who has opened many such shoulders, describes the stiffness and pain as due to the following changes in structures:

- 1 Adhesions between the roof and floor of the subacromial bursa involving (a) the subacromial portion, (b) the subdeltoid portion, and (c) the subcoracoid portion.

- 2 Adhesions between the bicipital groove and the tendon of the long head of the biceps.

- 3 Necrotic changes and inflammatory stiffening in the musculotendinous cuff.

- 4 Chronic inflammation in the synovial membrane of the joint and its capsule.

- 5 Adhesions in the extensions of the joint underlying the infraspinatus and subscapularis (subscapular and infraspinatus bursae).





FIG. 1. Injection—pectoralis major.



FIG. 2. Injection—latissimus dorsi.

6. Prolongation of the synovial lining of the joint down into the bicipital groove, the bursae under the infraspinatus and subscapularis, the subacromial bursa, and the glenoid half of the capsule.

It must be remembered that not all cases falling into this group present the above pathologic features in toto. Firm adhesions in one or more of the above structures might prove sufficiently valid to limit shoulder motion.

Codman<sup>1</sup> places the brunt of origin in traumatic cases on rupture of the fibers of the supraspinatus tendon; in the so-called spontaneous cases, on a necrosis of this tendon or even initial severe trauma.

It should be remembered that in spite of certain distinct causative factors already enumerated, the final clinicopathologic picture, with certain exceptions, may be indistinguishable from that of primary peri arthritis.

### Treatment of Periarthritis

Choice of therapy and subsequent response in primary and secondary peri arthritis once more point to an essential causative difference between these two forms in question.

In primary peri arthritis recovery is best obtained by a combination of local and systemic measures. In the secondary form ruptured tendon fibers must first be allowed to repair by rest, and mobility must be re-established by subsequent manipulation, heat, massage, and other measures. Complete rupture of the supraspinatus tendon is purely a surgical procedure which does not lead to peri arthritis<sup>1,2</sup> and therefore does not enter into this group of cases.<sup>1</sup> For peritendinitis calcarea before or during the onset of secondary peri arthritis a variety of therapeutic

procedures have been advocated: viz., long- and short-wave diathermy,<sup>19</sup> x-ray therapy,<sup>20</sup> surgical excision,<sup>1</sup> and needling<sup>21</sup> or irrigation of the subacromial bursa<sup>22</sup> when the deposit has already ruptured into the bursa. With proper treatment response in this latter condition is prompt, usually in a matter of weeks,<sup>1</sup> as compared to primary peri arthritis which, regardless of the therapy employed, is often long-drawn-out and tedious, and does not occur for months or even years.<sup>1</sup>

Treatment of the primary form encompasses a wide variety of therapeutic measures, including, for the debilitated patient, bed rest for a period of weeks.<sup>1,8,10</sup> Treatment of hormonal imbalance is effected with estrogens or thyroid extract.<sup>9</sup> Manipulation of the affected extremity, ranging from cautious stretching to full maneuverability under anesthesia, is also advised. Continuous stretching with traction apparatus appears to be the method choice with many.<sup>1,5,8</sup> Ultraviolet light, removal of focal infection, and other systemic measures are also advocated.<sup>9</sup>

Aside from the above systemic measures, based on pathology, a novel form of therapy is here proposed. This includes (1) injection of the specific structures involved followed by manipulation; (2) relief of pain and spasm by block anesthesia and subsequent stretching of the affected extremity.

### Injection of Specific Structures

The muscles and tendons injected by this technic are essentially the inner and outer group of structures outlined under "Pathology." The technic is simple and relatively free of hazards.

The patient is placed in a prone position, head flat on the table, and a small pillow is placed



FIG. 3. Long-head of triceps and point of injection.



FIG. 4. Injection—short rotators, patient on side.

under the affected shoulder to lessen pain during stretching. The arm is now passively extended until the contracted key structures stand out in relief. As already stated, the latissimus dorsi stands out laterally, the pectoralis major medially, and the long head of the triceps may be felt between these two at the midpoint of the axilla as a hard, constricting band. Strong pressure over these contracted structures usually elicits considerable pain. Three to 5 cc. of 2 per cent novocaine (procaine hydrochloride) are now injected into the belly of the muscles, and after a few minutes the extremity is firmly but cautiously extended with the forearm flexed on the arm. This is repeated several times. The long head of the triceps is similarly injected with 2 to 3 cc. of the solution, care being taken to avoid the axillary structures by repeated aspiration. At times the pectoralis major tendon is injected at or close to its insertion into the humerus when considerable tenderness exists in this area on palpation. Because of their role in pathology, the deltoid and teres major are similarly injected. Both tenderness and contraction, as demonstrable by palpation, act as a guide to injection. One or a number of the involved structures may be injected at one sitting, according to the condition of the patient. As a rule no more than two or three injections are given at one time.

The inner group of muscles are similarly injected with the patient in a sitting position, the arm passively extended to bring out contraction. The painful, affected structures may here be felt posteriorly as they offer resistance to the finger. Because of the frequent involvement of the under surface of the deltoid a more or less constant focus of pain corresponding to the upper third of the arm is also injected.

This technic, though necessitating patience

and repeated injection, especially in advanced cases, has, in my experience, led to good results and appreciably shortened the period of disability from one to one and a half years. Immediate mathematic proof of its efficacy has been demonstrated time and again by measuring extension before and after therapy. Suitable cases falling under the secondary group are treated similarly. Calcareous deposits, when present, are first dispersed when possible by injection of procaine into the deposit itself,<sup>19</sup> and the soft, mushy material is subsequently removed by needle irrigation. Incision and enucleation, however, is often the most direct method. See Figs. 1, 2, 3, and 4.

### Block Anesthesia and Manipulation

The efficacy of this form of therapy for the painful and disabled shoulder was demonstrated in 1937 by Steinbrocker and Tarsy.<sup>18</sup> Visual proof of its immediate efficacy in selected cases was offered by Tarsy<sup>23</sup> in the same year.

The brachial plexus on the affected side is first blocked through the supraclavicular route.<sup>18</sup> Injection is soon followed by paresis of the arm. During this phase of anesthesia the patient is unable to raise or otherwise use the affected extremity. In this state cautious manipulation is executed in the prone position. This method has distinct apparent advantages over manipulation with inhalation anesthesia. With proper technic, it is harmless, affords almost complete relaxation, though not as complete as with the former, and has the advantage of being sufficiently innocuous to be repeated a number of times, if necessary. Incomplete anesthesia gives poor results, however. Another advantage is the relief of periarticular and arm pain during and after anesthesia, followed by relief of spasm.

Block anesthesia and manipulation may be followed by a series of excellent measures advocated by Kendrick.<sup>8</sup> These measures, herein outlined, were, however, not employed by me in this series. Following manipulation:

Light traction should be applied to the arm, which is maintained in a position of 90 degrees abduction and 90 degrees external rotation.

During the first twenty-four to forty-eight hours ice caps are applied to the shoulder.

During the first two days following manipulation a complete range of motion is executed passively.

On the third day diathermy of low intensity is employed, followed by active movements of the arm.

On the fourth day active exercise of the arm by means of an "exerciser"\* attached to the head of the bed is instituted. This is followed by the reapplication of traction after each treatment. This traction should be used constantly during the first week.

At the end of one week the patient may be allowed out of bed for short periods.

During the final few days of treatment more active exercises are added, such as "wall-climbing" and placing the arm behind the head and back.

After ten days to two weeks the full range of motion is persistently maintained. Finally, the patient should be kept under close observation and physiotherapy and exercises should be continued until mobility and normal muscle tone are completely established.

When, for various reasons, the patient will not submit to block anesthesia and manipulation, and is content with a gradual improvement, the former technic of muscle injection and manipulation may be resorted to.

Thirty-four patients were treated by the above technics over a period of several years. Twenty-nine patients fell in the primary group and the remainder in the secondary group. All patients had previously received some form of therapy without improvement. Duration of disability in both groups ranged from two months to ten years, with an average of two and one half years. Twenty-seven patients obtained freedom from pain and complete mobility. Three were partially improved as to pain and function. In the remaining four patients treatment was totally unsuccessful. Duration of treatment varied from two weeks to one year, with an average of five months.

\* This consists of a length of rope running between two pulleys attached to the head of the bed about 2 1/2 feet apart. The ends of the rope are attached to two hand grips which are grasped by the patient and alternately worked downward. By this means the good arm helps to exercise the affected extremity.

When one realizes the therapeutic difficulties, the notoriously poor response to ordinary forms of therapy, and the long period of disability to which patients suffering from periarthritis are subjected, the above suggestions and technics appear to offer not only an innovation to the usual well-trodden therapeutic path, but also a practical system of shortening the period of disability.

## Summary

1. The similarity of one form of periarthritis of the shoulder joint to many phases of the rheumatic syndrome and the interest that it appears to present from a medical standpoint make it incumbent upon the medical man to have a workable understanding of this condition.

2. The main barriers to a clearer understanding of this condition in the past have been an insufficient knowledge of the causative factors involved as well as an incomplete understanding of its exact pathology. A synonymously repetitious and involved terminology as well as failure in many instances to distinguish between the two main forms of this condition have also led to considerable misunderstanding.

3. A more concise terminology of periarthritis, therefore, based on cause, pathology, and therapeutic response is herein proposed.

4. The causative factors, pathology, and clinical picture in the two forms of periarthritis in question have been set forth with particular emphasis on the specific anatomic structures involved.

5. Two forms of therapy have been employed for the treatment of this disability: (1) injection of the specific muscular and tendinous structures involved; (2) block anesthesia and manipulation.

6. A total of 34 patients were treated in accordance with the above technics over a period of several years. Of these, 27 patients obtained freedom from pain and complete mobility. Three patients were partially improved. In the remaining 4 patients treatment was totally unsuccessful.

7. The rather novel form of therapy here mentioned is introduced as an additional therapeutic approach, one which has led to comparatively prompt and satisfactory results in many hands.

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## ARMY MEDICAL DEPARTMENT OBSERVES ANNIVERSARY

On July 27, the Army Medical Department observed the one hundred sixty ninth anniversary of the establishment of the first medical service for the American Army. The Medical Department had its inception in the creation by the Continental Congress, July 27, 1775, of a hospital for the American forces shortly after George Washington assumed command in the Revolutionary War.

Among the letters of commendation received by Maj Gen Norman T. Army, were ones from Commanding General and General Henry H. oral of

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ficers, nurses, and enlisted men of the Corps should be especially proud, and I hope that you will accept for them and for yourself my very sincere congratulations on a job most efficiently and bravely done.

"On the combat fronts and at home, you have seen, as I have, the superior performance of the Corps and have witnessed not only its splendid role in battle, but also its predominant part in recent medical development and experiment.

"The admirable execution of the mission of the Medical Corps has earned the complete confidence of the country in a function of the Army which is naturally closest to the civilian consciousness.

"We in the Army acknowledge and endorse that confidence, and in addition, add our personal congratulations and praise"—Release from the Office of the Surgeon General, Aug 8, 1944.

## INSTITUTE OF CLINICAL ORAL PATHOLOGY TO MEET OCTOBER 30

The first open meeting of the New York Institute of Clinical Oral Pathology will take place in Hosack Hall at the New York Academy of Medicine on

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Dr Frederick S McKay, Colorado Springs, Colorado—"Fluorine and Mottled Enamel A Historical Survey"

Dr H Trendley Dean Senior Dental Surgeon, USPHS, Bethesda, Maryland "The Epidemiology of Fluorosis and Dental Caries"

Dr Wallace D Armstrong University of Minne

sota, Minneapolis Minnesota, Associate Professor of Physiological Chemistry, Director of Laboratory of Dental Research—"The Fluorine Content of Enamel in Relation to Resistance of Teeth to Caries"

Dr Basil G Bibby, Dean, Tufts Dental College—"Effects of Topical Application of Fluorides in Dental Caries"

Dr David B Ast, Assistant Director for Oral Hygiene, State of New York Department of Health, Division of Maternity, Infancy, and Child Hygiene—"The Practicability, Efficacy, and Safety of Fluorinating a Communal Water Supply Deficient in Fluorine to Control Dental Caries"

## COMMITTEE ON MEDICAL RESEARCH BEGINS PUBLICATION

The Committee on Medical Research of the Office of Scientific Research and Development, Office of the Surgeon General, has begun publication of a weekly journal entitled *Summary of Reports Received by the Committee on Medical Research*. Circulation of the publication is restricted to selec-

ted Medical Corps men in the United States Canada and Great Britain. The journal is edited and published by the Records Section of the Committee, under Dr Kenneth B Turner, assistant professor of Medicine, College of Physicians and Surgeons, Columbia University.

# PHYSIOPATHOLOGY, TREATMENT, AND PREVENTION OF FROST INJURIES

With Special Reference to Frost Injuries in Warfare

PAUL LIEBESNY, M.D., Bronx, New York

L T. GEN. J. C. EAKER, Commander of the Eighth United States Air Force, held his first formal press conference for American and British correspondents in London on March 24, 1943. General Eaker discussed in this conference a problem which is of great importance for physicians.

He pointed out that one of the phenomena which had proved troublesome for the Air Force was the occurrence of frostbite at the high altitudes at which the Flying Fortresses and Liberators operate. The difficulty is, he said, that the air crews are careless about adjusting their electrically heated clothing and persist in taking chances.

In the first World War we had to deal with frost injuries of the feet very often. The so-called trench foot occurred in soldiers who had to stay several hours or even days in trenches during positional warfare. In the war of movement the incidence of frostbite may be high, as we know from the Italian literature. In the Italo-French campaign of 1940 casualties due to frostbite were most numerous. The number was even higher in the armies of Germany and her satellites in the extremely cold winter of 1941-1942 on the Russian front, but there seem to be no details worth mentioning in the German literature. The occurrence of frostbite in the Russian Army is relatively low. This is to be expected, because the Russian people are accustomed to the cold climate and wear proper protective clothes, shoes, and gloves.

Trench foot was encountered in London in 1940 and 1941 among shelter dwellers and has been described by R. Greene.<sup>1</sup> This trench foot, called by Greene "shelter foot," was often seen among shelter dwellers who sat up all night with no compensating rest in a horizontal position during day. The occurrence of shelter foot was accelerated by the wooden bars of the deck chairs used by most of the patients. These wooden bars exerted prolonged pressure on the popliteal fossa, causing venous stagnation. Greene mentioned that the condition did not arise in wardens who, though exposed to the same degree of cold and damp, were frequently on their feet.

## Physiopathology

Frost injuries may be due to two causes: vasomotor disturbances or humoral pathologic changes.

*Vasomotor Disturbances.*—The normal physiologic reaction against exposure to cold is contraction of the small vessels and capillaries. The physiologic reaction becomes a pathologic state after longer exposure to intense cold, which does not have to be below 0 C., or after shorter exposure in real subzero temperatures.

The human skin, when exposed to low temperature, turns pale and by microscopic examination through the skin it can be seen that this is caused by the contraction of the capillaries, venules, and arterioles. After longer exposure the color changes to red, then to marble, and at last becomes cyanotic. This latter phenomenon is caused by the relaxation of the capillaries and venules. This relaxation, according to A. Krogh,<sup>2</sup> is a direct effect of the contractile elements which, due to local liberation of histamine or closely related substances ("H" substances) in the skin, become partly or even completely paralyzed. The constriction of the arterioles, however, persists. As long as this contraction is not extreme the skin remains red, but ultimately the constriction may become so extreme that no oxygen reaches the capillaries and the skin becomes cyanotic.

Proof that the local pallor in exposure to cold is caused by the contractile elements of the capillaries has been offered by Breslauer.<sup>3</sup> This author showed that this reaction may be elicited even in completely anesthetic regions. The further physiologic changes caused by cold are similar to those which Krogh could experimentally elicit on the tongues of frogs. This author dropped urethane on one single narrow capillary and arteriole of the mucous membrane of a frog's tongue. Whereas the arteriole remains narrow under the influence of urethane, the capillary dilates; more and more blood streams into the arterial part but not out of the venous part of the capillary. As a result the blood corpuscles agglutinate and form a clot in the venous end. Eventually the plasma with its colloids passes the capillary wall, causing edema in the interstices of the surrounding tissue. That is one cause of blisters in frostbite. If not enough

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capillaries remain intact for nutrition and oxygenization of the tissue, necrosis follows. The described reaction of the capillaries is a direct effect of cold or urticaria on the contractile elements of the capillaries, where is the vasoconstriction of the arterioles is of central origin.

Another reflex mechanism which may contribute especially to necrosis and gangrene of hands and feet may also be of central origin. That is the shunting of the arterial blood directly into the veins by arteriovenous anastomoses. These arteriovenous anastomoses were described by H. Hoyer<sup>4</sup> in 1887. More recently N. W. Popoff<sup>5</sup> has contributed very important studies on this subject. According to this author the arteriovenous anastomoses are seen almost exclusively on the ventral surfaces of hand and foot. T. Lewis and G. Pickering<sup>6</sup> proved that the arteriovenous anastomoses of hands and feet play an important role in the mechanism for regulating the general temperature of the body. However, this shunting of blood from the arteries directly into the veins with by passing of the capillaries may contribute to stasis in the capillaries.

### Humoral Pathologic Changes

The second cause for the occurrence of frostbite is humoral pathologic changes. These changes do not occur at temperatures above 0° Celsius but only below zero. They may occur at a lower degree below zero if the visomotor disturbances have already set in. At what degree of cold humoral pathologic changes in man may be inevitable cannot be told, but we may assume that temperatures below -20° C are always dangerous, especially for people who are not accustomed to exposure to such low temperature for a relatively long time.

The literature on humoral pathologic changes caused by exposure to cold in animals and man is inadequate. We have to rely on colloid chemical experiments and on botanical experiences. If a 2 per cent solution of gelatin is exposed to freezing temperature, ice crystals appear which gradually withdraw water from the gelatin. Eventually the water-poor gelatin forms a network which is enclosed in ice crystals. The same thing occurs in experiments with glue. By exposure to freezing temperature glue is changed to a spongy mass. The developed network persists even after thawing because the glue, through freezing, loses the ability to take up water in the same amount as before freezing. Also in plants the water leaves the cell and freezes on the wall.

that the surrounding tissue is torn to pieces. N. A. Maximow<sup>7</sup> discovered, furthermore, that

the developing ice not only accelerates the withdrawal of water but has also a mechanical coagulating effect upon the colloids of the protoplasm. It is important to keep in mind that also the living protoplasm of animals and man cannot sustain the loss of water to a higher degree. The molecular texture of protoplasm remains irreversibly destroyed if the loss of water transcends a higher degree. The loss of water in the plasma proteins is the second cause for the development of blisters, and the mechanical coagulating effect of ice crystals upon the colloids of the plasma may contribute to the agglutination of blood corpuscles and the formation of thrombi. The ice crystal formation and the loss of water in the plasma proteins explains the histologic findings in severe frost injuries, as there are the formation of vacuoles in the cells of the epidermis and subcutis and swelling out of interstitial tissue. In severest degrees of frost injuries the cutis, subcutis, cutaneous fat, and muscle are transformed into one mass with no structural differentiation. However, other histologic findings may be attributed to visomotor disturbances alone, e.g., the appearance of thrombi in the vessels and the sign of inflammation characterized by lymphocytic infiltration around the vessels. However, these lesions also may be accelerated or aggravated by ice crystal formation.

We may distinguish seven types of frostbite: (1) erythema and edema, (2) blisters and bullae, (3) superficial gangrene, (4) gangrene of skin and subcutaneous tissue, (5) gangrene of a whole part of an extremity or other parts of the body, especially the ears, (6) injury to muscles, tendons, periost, bone, and nerves without or with accompanying lesions of the skin, (7) chronic relapsing lesions of the skin—e.g., chilblains and other forms of erythrocyanosis.

The description of the pathologic anatomic findings of the different types of frostbite would transgress the aim of this paper.

### Treatment

*1. First Aid*—It is generally accepted that any kind of application of heat in frostbite is the worst thing that can be done. This is true in first aid as well as in treatment. Therefore, a patient suffering from acute frostbite should be brought into a cool room of about 58° F (10° C). The defrosting of the frozen parts must be done with great care by means of cool applications. As H. R. Clauston<sup>8</sup> stressed recently, the defrosting agent must have a temperature above freezing (32° F) and not above normal body temperature (98.6° F). Therefore, wet dressings with water of 41° F (5° C) to 58° F (10° C) have to be applied. The usually employed rubbing or



FIG 1 Second-degree frostbite of the left ear  
February 16, 1943



FIG 2 The same patient cured and discharged  
after four short-wave treatments February 20, 1943.

massaging of the frozen parts should be avoided. It may be harmful, causing injuries to the skin. The application of external heat to the frozen parts in turn is harmful because it increases locally the metabolism of the tissues. The blood supply which may be sufficient at low temperature of the tissue may become insufficient when the temperature is increased artificially. Therefore, the development of necrosis may be stimulated by heat. This is already known to be true in frostbite caused by vascular disturbances alone. Whether or not rapid thawing of actually frozen tissue increases the damage caused by the described humoral pathologic changes cannot be decided. The experiments on plants show that most of the plants may survive upon rapid or slow thawing after being frozen. However, there are exceptions; e.g., some types of pears and apples and the leaves of *Agave americana* always die after rapid thawing, whereas they survive after slow thawing.

There is, however, no doubt that rapid thawing in man stimulates the deleterious effects of the circulatory disturbances. In their important paper on "Refrigeration Anesthesia," L. W. Crossman<sup>9</sup> and his collaborators showed that

various degrees of elevation of temperature within febrile range enormously accelerate gangrene in bloodless limbs.

2. *Refrigeration Therapy.*—F. M. Allen, L. W. Crossman, and F. K. Safford<sup>10</sup> have treated with refrigeration a patient suffering from second-degree frostbite on both hands. One hand was put into an electric refrigerating box at 50 F.; the other was placed upon a bare icebag. After one week the hands were gradually restored to normal temperature. Healing was complete with "far less tissue loss than had been anticipated and with no residual complaints except some reduction of touch sensation."

The treatment of frostbite by refrigeration was recommended first by S. Stiassny,<sup>11</sup> an Austrian military surgeon, in 1904. This author treated frostbite with a spray of ethyl chloride. The therapeutic effect of refrigeration in frostbite may be explained partly by its antiphlogistic effect. On the other hand, this kind of treatment permits only a very gradual increase in the temperature of the frozen parts up to normal body temperature, so that there is sufficient time for the improvement of circulation by itself.

We may, however, not expect an active increase

and improvement of the circulation by refrigeration therapy of frostbite. To achieve this active improvement two methods have to be considered: (1) short-wave application at low intensity, and (2) sympathetic anesthesia and sympathectomy.

3. *Short-Wave Therapy*.—Short-wave therapy of frostbite, even in cases of gangrene of the extremities, is effective, according to my experience and according to recent publications of Italian authors. The short-wave current is applied with air-spaced electrodes. The treatments are given daily for ten minutes. The current is applied in such a dosage and the electrodes are kept at such a distance that the increase of the temperature of the skin in the treated area does not exceed 0.5 Celsius after ten minutes of application. I had reported in 1935<sup>12</sup> the short-wave treatment of 45 patients suffering from gangrene of the extremities of different causation, including frost injuries. Twenty-one of these patients were cured, 8 were relieved, one suffered a relapse after a short time, and 15 did not respond. Most of the patients who did not respond were suffering from diabetic gangrene. The average number of treatments given in gangrene cases was thirty. The highest number of treatments was given to a patient 65 years of age, suffering from arteriosclerotic gangrene of the left foot. The patient was cured after seventy-four treatments. This patient died four years later of pneumonia.

In frostbite of first or second degree complete recovery is usually accomplished in very few treatments. We had the opportunity in New York City in the winter of 1942-1943 to treat 4 patients with frostbite. All of them acquired the frostbite on February 15, the coldest day of that winter, with the lowest temperature of -8 F. (-22 C.) at 8:30 A.M. All 4 patients recovered completely after two to four treatments. Fig. 1 shows one of these patients suffering from second degree frostbite of the left ear before starting the treatment on February 15. Fig. 2 shows the patient after four treatments, on February 20.

Recently L. Borini and G. Matli<sup>13</sup> and P. Cignolini<sup>14</sup> reported favorable results in treatment of frost injuries with short-wave therapy in dosage of low intensity. Cignolini, for example, writes that his patients have no sensation of heat for the first six to eight minutes of treatment and feel a slight warmth between the eighth and tenth minutes. Cignolini found that even in patients admitted with dry gangrene only the mummified part was lost, while other segments were saved, regardless of their condition on admission. Referring to the technic of Cignolini, I have to warn against relying upon the subjective sensation of warmth of the patients in short-wave treatment of frostbite. I found<sup>15</sup> in ex-

perimental examinations on patients who were not suffering from disturbances of temperature sensation that there is no true relationship between the degree of the temperature increase of the tissue and sensation of temperature. At present the only way to avoid an overdosage is by measuring the skin temperature with a thermocouple in order to learn which dosage of current of the short-wave machine at our disposal has to be applied to achieve the desired result.

4. *Sympathetic Anesthesia and Sympathectomy*.—R. Lerich and J. Kuulin<sup>16</sup> recommend anesthetic infiltration of the lumbar and stellate sympathetic in patients suffering from frostbite with edema and pain. Nearly all patients were immediately relieved. The infiltrations were repeated on the following two days. It was found, if there was no necrosis or infarction, that all patients were well in a few days. J. de Girardier<sup>17</sup> recommends injections of the lumbar sympathetic with procaine hydrochloric (10 cc. of a 1 per cent solution) in frostbite of the feet without necrotic lesions. The author found that five infiltrations at intervals of two or three days are generally sufficient. Periarterial sympathectomy is indicated, according to Girardier, in necrotic ulceration, whereas he limits himself to section of the lumbar chain with ganglionectomy in cases with pronounced bilateral circulatory disturbances with or without necrotic ulcerations. This author also regards interventions on the sympathetic as a great advance in the treatment of frostbite lesions *without massive gangrene*. There is no doubt that the above-named methods are of definite value in producing vasodilatation and will improve the circulation in frostbite and achieve healing. But it is my belief that at least the same results can be obtained by short-wave therapy, which method is certainly superior in frostbite with gangrene. Frank V. Theis,<sup>18</sup> in a very important study on frostbite, refuses to submit patients to the hazards of an operation when satisfactory results can be obtained by conservative measures. This author recommends paxev treatment in frostbite.

5. *Plasma Transfusion*.—There is no doubt that all methods which improve the circulation will contribute to the healing of frostbite even if a small part of the affected tissue were actually frozen with ice crystal formation. However, if a larger part of tissue—e.g., a whole leg—were affected in this way the damage would be irreparable if we did not try to overcome the loss of plasma into blisters or damaged tissues and try to replace deranged plasma.

I should like to suggest consideration of transfusions of undiluted plasma in patients who are suffering from frostbite of large areas and of high degree. In order to be effective it is probable



that these transfusions should be given during the first twenty-four hours. It is also probable that this method might save extremities which otherwise would be lost.

### Prevention of Frost Injuries

The problem of prevention of frost injuries is of special importance in warfare. This problem includes protective clothing, adaptation to cold, proper nutrition, and the knowledge of predisposition to frostbite. I shall discuss here only the protective clothing of flying personnel and the predisposition to frostbite.

1. *Protective Clothing of Flying Personnel.*—The problem of protective clothing against frost injuries is especially difficult for flying personnel. The temperature decreases in general about 2 C. or 3.5 F. for each 1,000 feet of ascent. Therefore the drop in temperature between sea level and 20,000 feet will be 70 F. and between sea level and 35,000 feet about 122 F. This is untrue only in the arctic area in wintertime, where temperatures a few thousand feet off the ground may be higher than at ground level.

Flying personnel begin to suffer from cold, according to H. G. Armstrong,<sup>19</sup> at temperatures below 10 F. or -12 C., i.e., at about 13,500 feet above sea level, in spite of winter flying clothing. At first there are chilly sensations, accompanied by increased metabolism and muscular restlessness. The chilly sensations change to discomfort and the acuity of touch sensations and muscular reactions is dulled. The muscles may assume a state of mild tonic contraction, which further hampers and restricts free movement. Discomfort changes to pain, general shivering follows, and voluntary muscular movements become sluggish. There is no doubt that the best solution of the problem of protecting flying personnel against the rapid changes of temperature and atmospheric pressure will be a pressure-sealed cabin where artificial pressure and heat give the proper protection. But this kind of airplane is still an exception. In open-cockpit airplanes we have to rely on protection by proper clothing. Very heavy clothing is necessary to maintain heat balance at high altitudes. However, the weight and bulkiness of such clothing hampers the activity of the personnel, as described recently by E. A. Pinson and O. O. Benson.<sup>20</sup> To reduce this bulkiness, electrically heated clothing is now in general use. A disadvantage of electrically heated suits, as Pinson and Benson stressed, may be that the physiologic mechanism normally responsible for heat balance in the body will be upset by this mode of external heat application. If, for example, a flyer starts to heat his clothing at about 5,000

feet (at about 5 C. or 41 F.) his arterioles and capillaries may dilate and profuse sweating and all the discomfort of overheating may occur. This will hinder the flyer's making the proper adjustment to the environmental temperature and induce him to diminish the heat supply or even to stop it just at the time when an increase of heat would be necessary. The loss of body heat now will become much greater because the arterioles and capillaries are in a stage of dilation and some of the physiologic adjustment to cold—e.g., the increased adrenalin output, with consequent constriction of the arterioles, may be delayed. This can stimulate the development of frost injuries. I think, therefore, that carelessness of the air crew is not the reason for incorrect adjustment of their electrically heated clothing. There is no possibility for them to rely upon the sensation of comfort or discomfort due to heat or cold. They are quite unable to adjust properly the supply of heat needed in proportion to the decrease in the environmental temperature during ascent and the increase during descent.

I have drafted an instrument which may accomplish the automatic regulation of the heat supply in flying suits proportionally to the altitude at which the airplane happens to travel. The importance of properly regulated electrically heated clothing, especially the importance of avoiding overheating, may be illustrated by an experience of the French physiologist and physiotherapist, Stephan Leduc.<sup>21</sup> This author observed severe chilblains in patients who in wintertime had the habit of heating their extremities with electric thermophores, infrared lamps, or by exposure to hot iron stoves. The chilblains of these patients responded to treatment only after the patients gave up the habit of heating their extremities in these ways. This experience of Leduc may also explain the frequent incidence of frostbite of flying personnel using electrically heated suits.

2. *Predisposition to Frostbite.*—L. Brahamy<sup>22</sup> observed 338 cases of frostbite which occurred among employees of the Sanitation Department of the City of New York during the winter of 1933-1934. He found an increased susceptibility to frostbite in people suffering from vascular diseases or diabetes. People suffering from diabetes or manifest vascular diseases will certainly not be taken into the Army. However, there are some otherwise healthy people who exhibit a bad vasomotor reaction to cold. The simplest way to discover this vasomotor disturbance is as follows: after application of any kind of cool-water procedures the skin of a person with a normal vasomotor reaction turns red and a sensation of comfortable warmth then appears quickly. People with an abnormal reaction remain pale or

even get cyanotic for a considerable time and the sensation of cold and shivering sets in too. There is no doubt that people with this kind of vasomotor reaction to cold are especially susceptible to frostbite. This abnormal vasomotor reaction may be overcome by methods of adaptation to cold, otherwise, these people must not be exposed to subzero temperatures for a long period of time. Furthermore, patients suffering from thrombo-angitis obliterans, or Buerger's disease, are certainly predisposed to frostbite gangrene. Buerger's disease occurs in young adults and is usually overlooked in the acute stage. These patients start to suffer usually only when the disease enters the chronic stage after it has been in progress for months or even years. Even in the acute stage, however, any insult—e.g., exposure to cold—may aggravate the already present but not recognized circulatory disturbance to such an extent that gangrene of the extremities may follow.

I had the opportunity of treating two white men, 25 and 28 years of age, respectively, who were suffering from gangrene of the feet after sking. It is unusual for healthy adults to acquire frostbite while sking. Further observation proved that both patients were suffering from Buerger's disease, despite the fact that they had no reason to complain before "the accident of freezing." According to all we know about thrombo-angitis obliterans, we cannot assume that in these or in similar cases the exposure to cold caused the disease, but that the development of frostbite gangrene was stimulated by the already present pathologic changes of the vessels.

A very important study of F. V. Theis and M. R. Freeland<sup>23</sup> dealt with the problem of the early diagnosis of Buerger's disease. They found in a series of 7 cases of acute thrombo-angitis obliterans increased viscosity of the venous blood, rapid coagulation, and arterial oxygen saturation. Whether or not the findings of Theis and Freeland may be accepted can only be decided by examination of a greater number of cases. The number of men inducted into the Army despite the fact that they are suffering from unrecognized thrombo-angitis obliterans is certainly very small. However, if persons suffering from this disease are exposed to cold the development of frostbite gangrene may be expected. Examinations which could lead to an early diagnosis of Buerger's disease in the acute stage should, therefore, not be omitted.

## Summary

The most frequent forms of frost injuries in warfare are trench foot, "shelter foot," and frostbite, especially of flying personnel.

by exposure to low temperature above 0°C or by humoral pathologic changes which may occur in consequence of actual freezing of the body fluids on exposure to subzero temperature.

**Treatment**—1 Every kind of application of heat is harmful. In first aid the defrosting of frozen parts must be done by means of cool applications. Wet dressings with water of 41 to 58°F have to be applied. Rubbing or massaging of the frozen parts should be avoided.

2 Refrigeration therapy, according to F. M. Allen and collaborators, may be tried.

3 Short-wave therapy at low intensity has been found effective by this author and by Italian clinicians.

4 The pros and cons of sympathetic mesotherapy and sympathectomy have been discussed.

5 The author suggests consideration of early plasma transfusion in patients who are suffering from frost injuries of large extent and high degree.

**Prevention**—1 Protective clothing for flying personnel has been discussed. Electrically heated suits may be the best solution of this problem, but it seems necessary that the supply of heat should be automatically regulated in proportion to the altitude reached by the airplane.

2 Predisposition to Frost Injuries. Individuals with an unrecognized abnormal reaction to cold or those suffering from thrombo-angitis obliterans in the acute stage may be predisposed to frost injuries.

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# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the November 1 issue and will concern "Management of Abdominal Distention."

### Treatment of Drug Addiction

DR. HAROLD G. WOLFF: We are going to discuss today the management of morphine addiction. Dr. Wikler, who is a member of the U.S. Public Health Service, and who works at the Narcotic Farm in Lexington, Kentucky, where such patients are cared for, has had wide experience with these patients and will epitomize the problem for us, and allow us to bombard him with questions. Dr. Wikler.

DR. ABRAHAM WIKLER: While I shall try to limit the opening of this discussion to the treatment of drug addiction, I think it is necessary to state first what the general problem is so that the rationale of the treatment may be better understood. In this discussion I shall consider only addiction to opiates. There are other important "drug addictions," such as to alcohol and the barbiturates, but since my experience has been limited almost entirely to opiate addiction, I shall discuss this phase of the problem alone.

Drug addiction presents a problem in psychosomatic (or somatopsychic) medicine. We have to deal with a derangement of the entire personality, including both its physical and its mental aspects. Treatment must be directed toward all of the basic factors involved in drug addiction. If it is directed solely to one or another aspect of the problem, treatment will be futile. In the treatment of opiate addiction we have to consider the phenomena of tolerance and physical dependence. These usually go together, although in the case of other drugs tolerance can occur without physical dependence. In addition to tolerance and physical dependence we have to deal with habituation or "psychic dependence," which is manifested by the tendency for the patient to relapse to the use of opiates even after he is no longer physically dependent on the drug. When we speak of drug addiction to opiates we include all three of these concepts, and it is therefore apparent that one cannot treat physical dependence alone or habituation alone and expect satisfactory results.

At Lexington there has been evolved a program for the treatment of the patient from this point of

view—that is, treatment of the organism as a whole. Detailed reports concerning this treatment have been published from time to time, particularly by Dr. Lawrence Kolb, Chief of the Mental Hygiene Division, U.S. Public Health Service, Dr. Ossenfort, Dr. J. D. Reichard, Medical Officer in Charge, Dr. C. K. Himmelsbach, Director of Research, Dr. M. J. Pescor, Dr. R. H. Felix, and their associates at the U.S. Public Health Service Hospital, Lexington, Kentucky. The treatment of drug addicts in that institution as it is today is the result of the combined efforts and research of this group.

The treatment consists essentially of withdrawal of the drug and rehabilitation of the patient physically, psychologically, and sociologically. To this end the institution at Lexington admits patients of several categories. We have a volunteer group. These are patients who ask for admission after they have been certified as drug addicts by their physicians and have completed the necessary forms, which are obtainable from the Surgeon General, U.S. Public Health Service, Bethesda, Maryland. These patients are admitted free of charge if they cannot pay; if they can they pay, a dollar a day. The largest group, however, consists of patients who are sent to the institution for violation of some Federal statute, and these are divided into several groups. Most of them have prison sentences to serve. If they are addicts and in need of treatment, they are sent to Lexington. Another group consists of "probationer" patients who have been arrested for violation of the Harrison Narcotic Act but whose sentences have been suspended upon the promise that they will report to the hospital for treatment and remain there until they are pronounced cured by the medical staff. After arrival at the hospital these patients are all treated alike from the medical standpoint. However, some differences in the custodial regulations do arise because of differences in their legal status.

On arrival the patient is taken to the admission room, and the first physical examination, which

is brief but careful, is given there. After it has been determined that the patient has brought in no contraband, he is examined for gross physical defects, cardiac, pulmonary, or nervous disorders, and contagious diseases. Particular attention is also paid to evidence of active physical dependence on the drug. This is not a simple procedure. There is no way of proving that a patient is dependent on morphine except by watching for withdrawal signs which appear in such patients when morphine is withheld. These appear within thirty hours or less from the time of the last dose. If for some reason, medical, legal, or other, one wishes to demonstrate that a patient is physically addicted to opiates, he must be studied in a controlled environment under constant observation for a day or two, and only if the characteristic withdrawal signs appear can one state that the patient is physically dependent on the drug. We do not usually have to subject the patient to this procedure at the time of his arrival, but we do try to observe other, though less conclusive, signs of active addiction.

Of these, constriction of the pupils is probably the most significant. This may be present if the patient has had morphine recently—that is, within several hours before admission to the institution. There may also be some degree of stupor or other evidence of the narcotic effects of the drug. We also look for fresh needle marks. These may be the result of subcutaneous injection, in which case they usually appear on the lateral aspects of the arm or the thigh, or of intravenous injections, in which case pigmented scars may be seen in the antecubital fossae or elsewhere. A brief history is taken with particular reference to addiction—namely, the time of onset of addiction, the average daily dose, the reasons for relapse, and the reasons given by the patient for the use of drugs in the beginning.

If, in the opinion of the examining physician, the patient is actively addicted to the drug, he is sent to the withdrawal ward. The procedure there is, first of all, to make the patient comfortable. Withdrawal is not begun immediately, but the patient is given enough morphine to achieve "stabilization." The exact amount given varies from case to case and depends to a large extent on the quantity of morphine habitually taken by the patient, and on the signs exhibited by him after delaying injection of morphine for about twelve hours. Ordinarily  $\frac{1}{2}$  gram of morphine every four hours or 1 gram every six hours will suffice. If, from the available evidence, the examining physician finds that physical dependence is not very strong he may start with  $\frac{1}{8}$  or  $\frac{1}{4}$  gram of morphine every six hours. In rare cases with very mild physical dependence, morphine may be withdrawn imme-

diately. The object of this preliminary stabilization is to get the patient used to the surroundings of the hospital, to show him that he is not going to be treated by the well-known "cold turkey" method, which consists of nothing but abrupt withdrawal, and also to "size the patient up," with reference to his personality and physical condition. After two or three days of stabilization, during which a more thorough physical examination is made and the patient, the doctor, and the hospital staff have become acquainted with each other, withdrawal is begun.

The method used at Lexington is that of rapid reduction. The doses of morphine are progressively reduced in size so that by the end of a week or ten days the patient is receiving no opiates at all. The exact procedure varies with the individual case, and several methods have been proposed. Dr. Himmelsbach prefers to space the injections nineteen hours apart. The initial or stabilization dose is cut in half, and then at the time of the subsequent dose, half the preceding dose is given, and so on until the patient is down to about  $\frac{1}{8}$  grain of morphine. After that, codeine is substituted, and a day or two later all opiates are discontinued. The rapidity and the method of withdrawal depend to a large degree on the abstinence signs which the patient exhibits during the course of withdrawal. Since these are very important and are the foundation for the treatment of the withdrawal phase of morphine addiction, I will go into them in some detail.

A method has been devised by Dr. Himmelsbach for evaluating objectively the signs which the patient exhibits on withdrawal of morphine. For quantification, the signs are scored in terms of points. The first group consists of yawning, lacrimation, running of the nose, and sweating, to each of which is assigned one point. The next group consists of anorexia, mydriasis, tremor, and goose-flesh. The third consists of restlessness, emesis, elevation of temperature and blood pressure, and loss of weight. In practice, the patient is observed in bed or in a special examining room every few hours and the scores are recorded on a special card. In this way at the end of the day one can add up the total number of points and arrive at an objective estimate of the intensity of the abstinence syndrome. There is another phase of the problem, however—namely, the reaction of the patient as a whole to the discomfort which accompanies the exhibition of these signs. The nature of these secondary reactions is determined by the adaptive mechanisms of the individual case and therefore is as diverse as the personalities of addicts themselves.

As you know, many so-called treatments of the morphine-abstinence syndrome have been pro-

drinking makes it expedient to place them in a single category.

Psychoses due to opiates or opiate addiction per se are said to exist, but no such case has ever been seen at Lexington. Psychotic patients are admitted with active "habits" but their psychoses antedate or are unrelated to addiction. In these cases, paranoid schizophrenia probably constitutes the largest single group.

After the patient is in condition to do so he is brought before a classification board, where all the facts I have mentioned are considered, and the patient is assigned to a suitable department of the institution for further treatment. He may be recommended for special psychotherapy or may be treated routinely. He is assigned to a definite occupation on the farm, in the industries, maintenance shops, or hospital, and he is given vocational training if necessary. In the time available, which we think must be at least six months in the average case, an attempt is made to correct, as far as possible, basic personality difficulties which predispose the patient to relapse. Each patient is assigned to a psychiatrist who administers psychotherapy as indicated and who interviews all patients under his care from time to time to follow their progress. The patient's general health is cared for by daily clinics, or "sick calls," as they are termed, and the facilities of a complete general hospital within the institution are available to him at all times. He may also avail himself of diversified educational and recreational facilities. After a period of about six months the patient is considered for discharge by the medical staff, provided this is consonant with the sentence, if any, which he has to serve. The criterion for discharge as cured is whether or not the patient has acquired the power for self-control with reference to the use of narcotic, habit-forming drugs as defined by law. If discharge is recommended, efforts at occupational placement and follow-up studies are made by the social service department.

This, in a general way, suffices for a description of the treatment of drug addicts at the U.S. Public Health Service Hospital at Lexington, Kentucky. Now we can take up any special aspects of the problem which you may wish to inquire about.

DR. WOLFF: I wonder if you could let us have the percentage of cures in the various groups.

DR. WIKLER: The percentage of cures has not been broken down with respect to each of the groups in Dr. Kolb's classification. In general it is difficult to state when a patient is actually cured. By "cure" we mean that a patient not only is not physically dependent upon but does not relapse to the use of drugs. Because of legal complications and other administrative diffi-

culties, our follow-up system is not wholly satisfactory, but a very conservative estimate is that about 12 per cent of the patients that are treated are actually cured. There is a large group of patients whom we lose track of after they leave the institution; it is reasonable to assume that a considerable percentage of these remain "cured." However, 35 per cent of those treated are known definitely to relapse. As for the 12 per cent that are actually cured, I know of no study regarding their distribution in the Kolb classification. From my own personal experience I would say that our cures are obtained chiefly from the second group and the occasional patient in the first group.

DR. HARRY GOLD: The so-called cure—that is, having the patient leave the hospital without symptoms and without drug—applies to 100 per cent of those cases, does it not?

DR. WIKLER: We do not call that a cure. If the patient leaves the hospital he obviously has been cured in the sense that he is no longer physically dependent upon the drug, but if he relapses as soon as he steps outside the gate, we cannot consider that he has been cured.

DR. HARRY GOLD: That takes how long on the average?

DR. WIKLER: We feel that about six months is required. Studies on the physical condition of those patients with respect to the effects of the drug seem to indicate that after the withdrawal of opiates the patient is not free from the effects of addiction for about six months; that is, taking a large number of patients who have been "withdrawn" and studying them through withdrawal, convalescence, and recovery, we find there are small differences up to six months after withdrawal. We try to keep them about that length of time. Voluntary patients can "sign out" when they want to, but probationer patients who leave against medical advice may forfeit the suspension of their sentences and be rearrested and returned as prisoners. In many instances patients have been discharged as cured after shorter periods of treatment. We have discharged voluntary patients as cured within three or four months and have done so in a few instances with probationers.

DR. GOLD: I want to amplify my question. How long does it take before the patient can get on without morphine in the hospital? He might stay in the hospital very much longer, but from the beginning of the reduction to the time when no more drug is needed, how long is the average time?

DR. WIKLER: I should say about ten days.

DR. WOLFF: Dr. Wikler, if you were living in a small city and you discovered that one of your patients was addicted to an opiate, how would you manage that man's problem? Would you

treat him, or how would you proceed? Most of us are going to be doing a different kind of practice from the one you outlined. Is it possible to treat a drug addict under circumstances other than those you described?

DR. WIKLER: I believe it is possible to treat drug addicts who fall into the first group, normal individuals, people with personalities not very different from the average, whose adjustments have heretofore been satisfactory and whose addiction to opiates has been purely accidental, the consequence of some illness or other condition over which they had no control. Such patients may be treated by the private physician. But patients with personalities corresponding to those of the other groups in the classification we use probably cannot be treated satisfactorily outside of an institution.

DR. WOLFF: You recommend that they go to a psychopathic hospital or some place where they are restrained during the period of withdrawal?

DR. WIKLER: Yes, I would say that they should go to an institution where some control over their treatment is exercised. That is, where they can be kept for a sufficient length of time to effect a cure.

DR. WOLFF: Suppose you were attending at a large hospital, for example, and a patient with rheumatic fever were discovered to be an addict, would you undertake the treatment while the patient was on the ward?

DR. WIKLER: If his physical condition permitted it, I think that one could undertake withdrawal of the drug. The chances of permanent success would depend largely upon the personality of the patient. If the chief addicting factor was rheumatic fever, the chance of success would be good. If, on the other hand, the addiction was based upon the relief of tension which the patient experienced when the drug was administered, and the tension was based on personality difficulties of a serious nature, I would think that treatment would not be successful in a short time.

DR. WOLFF: As you describe these effects of physical dependence, it sounds as though they might be the bodily manifestations of terror or panic, or desperation. Is it possible that they are merely the outward signs of the individual's distress at having this important agent withdrawn; and, if one were to give the patient reassurance and spiritual support he might not need the drug during that period?

DR. WIKLER: I do not think so. I believe that these signs of withdrawal are intimately linked up with the patient's development of physical dependence upon the drug. They may be aggravated or perhaps diminished by the reaction of the patients to these symptoms, but there is a lot of evidence to indicate that they are not merely

the effects of anxiety. In the first place, one can see marked signs of physical dependence in patients who, at least externally, show little or no anxiety, and go through this period calmly. On the other hand, patients who express great anxiety and are obviously terrorized by the prospect of withdrawal may exhibit none of these symptoms if their addiction is mild. Furthermore, the symptoms and signs observed in addicted animals, such as the dog, the monkey, and especially the chimpanzee, are similar to those seen in human beings. The progression of these symptoms is almost identical, too. Moreover, the failure of hypnosis, barbiturates, and the lowering of body temperature to influence the abstinence signs significantly suggest that they are not merely the manifestations of experienced anxiety or terror.

DR. McKEEN CATTELL: Do you have any criteria for determining which of the withdrawal symptoms are entirely psychologic?

DR. WIKLER: It is my opinion that, since the autonomic nervous system can respond only in certain fairly circumscribed ways to stimuli of any sort, such as withdrawal of a drug on which neurones have become dependent or in the process of adaptation to an unpleasant situation, it is impossible to say which particular abstinence sign is "psychologic" and which is not. However, in the abstinence syndrome there is a fairly uniform sequence of events, which indicates that they are not entirely dependent upon the mental reaction of the patient. The early symptoms, yawning and lacrimation, for example, are not characteristic of anxiety states; yet they appear almost constantly during withdrawal. On the other hand, patients with anxiety may show very marked mydriasis without such characteristic withdrawal signs as piloerection or rhinorrhea.

DR. WOLFF: I notice that you build up the patients after withdrawal. Is there any advantage in building them up and then withdrawing?

DR. WIKLER: If the patient's condition is very bad we try to build him up first and then withdraw, but in the average case we do not feel that there is much to be gained by building the patient up from a marginal level to a very good one before withdrawing.

DR. WOLFF: I understand there are important fluctuations in the weight curve before and after withdrawal. Will you comment on that?

DR. WIKLER: During the period of abstinence there is quite a drop in the curve, which gradually rises again after withdrawal is completed.

DR. WOLFF: Is there an average drop of about 3 kilograms?

DR. WIKLER: About that; 3 or 4 kilograms during withdrawal.

DR. WOLFF: Is the patient eating well during that period?

DR. WIKLER: The curves of weight and caloric intake are in general parallel during the first five days after withdrawal. Later they diverge.

DR. WOLFF: Is there a period of hydration during which the patients gain weight from the fluid intake?

DR. WIKLER: Yes. Addiction is accompanied by hydration, as studies by Dr. Williams have shown.

DR. GOLD: I take it, from all that you have said, that physical dependence is of little importance in the larger problem of controlling morphine addiction. The symptoms of physical dependence may be cured in ten days or so. Psychic dependence or habituation seems to be the aspect of addiction so resistant to cure. Do you agree?

DR. WIKLER: Most important is the role of personality in the development of addiction. That question has been discussed by many people, and there is no general agreement, but it appears to many observers, and Drs. Kolb and Himmelsbach have so stated, that the basic problem is one of personality defect. But we do know this: that people who have so-called inadequate personalities find it more difficult to discontinue use of the drug once physical dependence has been established, because of the discomfort attending withdrawal. They therefore continue to use it even when they no longer obtain the "lift" or feeling of euphoria for which they took it in the first place. The economic, social, and personal consequences are disastrous. For these reasons the development of physical dependence must be considered an important phase of the problem of drug addiction.

INTERN: What is your attitude toward the use of insulin in these cases?

DR. WIKLER: I have had no experience with that personally, but Drs. Kolb and Himmelsbach state that it is of no value in the treatment of withdrawal symptoms. We sometimes use insulin in 15-unit doses several times a day to improve appetite and promote the ingestion of food during the period of fall in the caloric intake curve. We find that that is of some value in maintaining the weight of the patient during withdrawal.

DR. CATTELL: Have you had any experience with marihuana in relation to morphine addiction?

DR. WIKLER: I have never tried it, but it has been tried in the treatment of the morphine abstinence syndrome at our hospital and found to be of no value.

INTERN: In connection with the supposedly harmful effects of morphine addiction in China

and elsewhere, how does one account for the fact that some people go on as addicts for many years apparently without damage to themselves?

DR. WIKLER: Your question might be phrased: Does morphine prove deleterious in and of itself?

DR. WOLFF: Along the same line, can an addict continue on the same dose and be effective in his work?

DR. WIKLER: Apparently that can be done, but only rarely. To achieve "equilibrium" the addict is constantly preoccupied with getting enough or injecting enough but not too much of the drug to prevent withdrawal symptoms. It is hardly likely that in the face of such a problem the addict can fulfill the responsibilities and obligations that are incumbent on members of society. One cannot have a chronic disease like morphinism, which requires constant "treatment," and be up to par any more than one can have chronic arthritis and work at top efficiency. Conceivably, an occasional addict may make a reasonable adjustment during addiction, but this is rare.

DR. C. H. WHEELER: If morphine were cheap and as easy to buy as cigarettes, would that difficulty exist?

DR. WIKLER: Of course, if morphine were easily obtainable, the social and economic problems complicating the lives of addicts would be solved to a large extent, and some of them might become reasonably useful citizens. However, this would not solve the over-all problem of morphine addiction, for several reasons. First, the addict is rarely able to achieve physiologic equilibrium even if he has a plentiful supply of morphine. This is difficult to do even on a research ward. Second, "normal" behavior is achieved only when the goal of personal satisfaction, which we all seek, is reached by activity determined by drives which have social value, such as security, prestige, family attachments, financial independence, etc. When personal satisfaction can be acquired through the simple expedient of injecting morphine these activities are rendered superfluous and the addict becomes a useless burden on his family and society in general. Third, easy availability of such a potent sedative as morphine would lead to its use by thousands, perhaps hundreds of thousands of neurotic, psychopathic, or otherwise inadequate people, of whom there are plenty in any society. A somewhat similar condition actually prevailed in this country before enactment of the Harrison Narcotic Act, and in Germany just after the first World War.

### Summary

DR. WIKLER: Treatment of drug addiction must be directed toward both physical and

psychic dependence. For the former, rapid reduction is the method of choice, morphine being the only "specific" drug used. Supportive therapy, such as infusions of glucose in saline, warm baths, massage, bromides and barbiturates, vitamins, and high caloric diets are also employed. In the presence of cardiac failure, acute infectious disease, far-advanced active tuberculosis, tabetic crises, and other acutely painful conditions, withdrawal is delayed until the acute condition is relieved. Habituation (psychic dependence) is treated by such measures as are indicated after thoroughgoing physical, psycho-

metric, and psychiatric studies are made. Such treatment is best carried out in a suitably equipped hospital over a period of about six months. The prognosis depends largely on the underlying personality. The best results are obtained in these patients whose adjustment in life had been fair until addiction. The relative importance of the abstinence syndrome in addiction and the need for rigid control of the dispensing of opiates are discussed.\*

\*Dr. Wikler wishes to express his thanks to Dr. C. K. Himmelsbach for the use of the lantern slides referred to in this conference.

### DISTRIBUTION OF TUBERCULOSIS DEATH RATE

Some of the major battles in the national tuberculosis control program recently authorized by Congress will be waged in the ninety-two cities of 100,000 or more population, where about one out of every three tuberculosis deaths occurs, and where average tuberculosis death rates are about one third higher than in smaller towns and rural areas, Dr. Herman C. Hilleboe, chief of Tuberculosis Control Division, the U. S. Public Health Service, Federal Security Agency, said on August 3.

The Public Health Service has published tabulations, based on data from the U. S. Bureau of Census for the three year period 1939-41, centering around the census year 1940, Dr. Hilleboe said, which show extreme variations in the death rates for tuberculosis in large cities from as low as 15.6 per 100,000 among white persons in Grand Rapids, Mich., to as high as 275.5 per 100,000 among non whites in Newark, N. J.

"Studies are being made to discover what favorable conditions are responsible for the low tuberculosis death rates in some of our large cities," said Dr. Hilleboe, "and several of the cities with high mortality rates already have undertaken vigorous tuberculosis control programs to find and remedy the causes for their large tuberculosis death rates."

The average yearly tuberculosis death rate in the ninety-two large cities was 55.4 per 100,000 population, compared with rates of 43.5 in places of 2,500 to 100,000 population, and 41.1 in rural areas.

These tabulations show only the "crude" rates for both sexes and all ages, Dr. Hilleboe pointed out.

Other studies, as yet unpublished, show that although tuberculosis death rates for males are higher in cities than in rural areas, the rates among fe-

males in rural areas are higher than in cities, except for very young girls. These facts mean that special problems, which must be solved in the national tuberculosis control program, exist in smaller cities and rural areas, as well as in large cities, said Dr. Hilleboe.

Fourteen of the ninety-two cities had tuberculosis death rates of less than 30 per 100,000 among all races. These cities, and their rates for all races were:

Grand Rapids, Michigan, 15.6; Salt Lake City, Utah, 19.3; Minneapolis, Minnesota, 20.9; Des Moines, Iowa, 22.7; Spokane, Washington, 23.8; Akron, Ohio, 25.1; Duluth, Minnesota, 25.1; Flint, Michigan, 25.5; Wichita, Kansas, 26.4; Long Beach, California, 26.6; St. Paul, Minnesota, 26.8; Peoria, Illinois, 27.0; Springfield, Massachusetts, 27.2; Somerville, Massachusetts, 27.7.

Twelve cities had tuberculosis death rates of more than 74 per 100,000 among all races:

Nashville, Tennessee, 79.3; Norfolk, Virginia, 80.6; New Orleans, Louisiana, 81.0; Baltimore, Maryland, 82.1; Washington, D. C., 82.7; Birmingham, Alabama, 83.7; Atlanta, Georgia, 86.5; Memphis, Tennessee, 89.1; Jacksonville, Florida, 89.4; Sacramento, California, 97.5; Chattanooga, Tennessee, 113.7; San Antonio, Texas, 151.7.

Rates for all races were highest in the South Central cities and lowest in the Mountain cities. Rates for whites were lowest in the North Central and the New England and Atlantic states, and were highest in the South Central and Pacific. Conditions were almost exactly opposite for nonwhites, for whom rates were lowest in the South Central and the Pacific states and highest in the North Central and the New England and Atlantic

### AMERICAN COLLEGE OF SURGEONS CANCELS 1944 CLINICAL CONGRESS

The American College of Surgeons, upon action of its Board of Regents, has canceled its Annual Clinical Congress because of the acute war situation that has developed, involving greater demands than at any time in the past upon our transportation systems for the carrying of wounded military per-

sonnel, troops, and war material. The Congress was to have been held in Chicago, October 24 to 27.

Dr. Irvin Abell, of Louisville, Chairman of the Board of Regents, in making the announcement, said that this action was taken after consultation with officials in Washington.



# History of Medicine

## HISTORY OF PUBLIC HEALTH IN CHAUTAUQUA, CATTARAUGUS, AND ALLEGANY COUNTIES

H. R. O'BRIEN, M.D., M.P.H., Charlottesville, Virginia

PASSING over the missionary priest, the fur trader, and the Colonial soldier, our story begins with the settling of these three counties after the Revolution. The first white settlement in this area came in 1796, when Steven Cole arrived in Elm Valley, near Andover. His son, Daniel (February 18, 1797), was the first white child born in Allegany County. John McHenry was born near Westfield, early in 1802. On April 30, 1806, Hiram Warner McClure was born at Franklinville. Other settlers followed, and the three counties were organized within that decade. Table 1 shows the growth of population since.

Our knowledge of health conditions in those pioneer days is limited. In 1807, we hear, some terrible sickness became epidemic in and around Olean, attacking Indians and whites. A squaw was tortured to death as a witch by other Indians, who thrust burning sticks down her throat. An early physician of Allegany County wrote in later years:

"The summer of 1804 was moderately warm, while the winter was intensely cold. Much snow fell, and lay longer than ever before known. The new settlements were healthy; the winter diseases were inflammatory. These diseases continued during 1805 and 1806, and the abusive use of mercury sacrificed numbers. The character of the inflammatory fever varied with localities in 1807. Near streams whose course was obstructed by dams, strong symptoms marked its attack, whereas on high ground the approach was insidious and more difficult of control. Ophthalmia prevailed in July and August; influenza was epidemic in September. The season of 1808 resembled the one previous. A typhoid appeared in January and continued until May. The treatment was careful depletion followed by judiciously given stimulants. In 1811 bilious fever prevailed. In the spring of 1812 a few sporadic cases of pneumonia typhoides, a previously unknown disease, first came to notice. It was the most formidable epidemic ever prevalent in this country. The disease became general in 1813 and caused great mortality. By spring, 1814, it entirely disappeared. The principal disease up to 1822 was dysentery; it was most fatal to children. The change since 1828 is such that death from fevers became a rare occurrence and consumption took precedence."

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944.

Senior Surgeon (R), USPHS; formerly Commissioner of Health of Cattaraugus County.

Try to picture the pioneer scene. The hills were covered with virgin forests, in which the settler slowly chopped out a clearing and built his log cabin. Later he built a dam and gristmill on a nearby creek, to grind his grain and his neighbors'. In Cattaraugus and Chautauqua counties lumbering was the first major industry, great rafts of planks going down the Allegheny to build up Pittsburgh and the newer communities along the Ohio. A quart of whiskey cost twelve and one-half cents. These were strenuous days when deaths from "violent and accidental causes," and from malaria and dysentery were prominent. The pioneer mother bore large families of children and frequently reared many.

In 1816 Dan Huntley drove thirty cows from Cortland County to Franklinville and the first dairy appeared in Cattaraugus County.

Doctors came early to serve the new settlements. There were enough in Chautauqua County to form a county medical society in June, 1818, in "court week." This was only ten years after the organization of the Medical Society of the State of New York. Cattaraugus County followed in 1833, but this organization lasted only until 1844. It was started again in 1867.

There was little public health organization in those days. A State law of 1801 set up quarantine provisions, to be enforced in inland towns by two justices of the peace, who might appoint others to help. Following the appearance of cholera in New York City in 1832, a "cholera act" provided for local boards of health, with

TABLE 1.—COUNTY POPULATION ENUMERATED AT EACH DECENNIAL CENSUS

Year	Allegany County— Created April, 1806	Chautauqua County— Created March, 1808	Cattaraugus County— Created March, 1808
1810	1,942	Not shown	Not shown
1820	9,330	12,568	4090
1830	26,276	34,671	16,724
1840	40,975	47,975	28,872
1850	37,808	50,493	38,950
1860	41,881	58,422	43,886
1870	40,814	59,327	43,909
1880	41,810	65,342	55,806
1890	43,240	75,202	60,866
1900	41,501	88,314	65,643
1910	41,412	105,126	65,919
1920	36,842	115,348	71,323
1930	38,025	120,457	72,398
1940	39,681	123,580	72,652

control over quarantine and nuisances. Each local board made its own regulations. This act soon lapsed, and it took the new epidemic of 1849, when five thousand people died in New York City of cholera, to revive the law permanently. The law of 1850 required the appointment of boards of health and health officers in every city and village, and of health officers in each town. Powers of the boards to abate nuisances were strengthened in 1867 after another epidemic of cholera appeared.

In 1860 local school boards and trustees were directed by law to exclude from the common schools any child who had not been vaccinated. They could furnish vaccine to those whose parents were unable to do so. The law was frequently ignored.

In 1850 the president of the State Medical Society urgently recommended the establishment of a State Board of Health. A standing committee on hygiene and medical statistics became a part of the Society's organization. The laws of 1847 had made provision for registration of births, deaths, and marriages, but in 1870 the Society was again urging legislation to make registration effective. The same year physicians returning from Europe were bringing back clinical thermometers. The telephone was invented.

Dr Thomas J. King of Machias served in the Assembly in 1876 and 1877. He was appointed chairman of the committee on public health, and probably had something to do with the crystallization of sentiment for a State Board of Health. The law was passed, and the board began to function in 1880. Its annual reports reflect the conditions which had obtained for decades past, and which had called the board itself into being.

In the world of the 80's, this area was predominantly rural. The cities were much smaller than now, but the towns themselves, outside of the corporation limits, had more people living in them than they have today. Roads were dirt or corduroy. The railroads had come, and the great body of travel was over them. Municipal water supplies were being installed in a few places—in Salamanca (1881) in Jamestown, Fredonia, Olean, Wellsville and Little Valley a year or two later. Dunkirk boasted a city water supply in 1870 or thereabouts. There were scattered stretches of local sewers in some municipalities but aside from Chautauqua Assembly Grounds no place had a sewage disposal plant before 1912.

The germ theory of disease was beginning to be discussed in scientific circles but did not figure in public thought. In medical opinion typhoid and diarrhea were connected with sewage, but

diphtheria was a puzzle. In June, 1880, some 60 cases occurred in the town of Harmony, Chautauqua County, with 22 deaths. The epidemic, which attacked school children especially, was ascribed to impure drinking water.

It was part of the task of the newly formed State Board of Health to perfect some form of health organization in every corner of the State. Towns and villages that had not appointed a board of health or a health officer (a physician) were induced to do so. Registration of births and deaths and reporting of communicable diseases were taken up in earnest. School boards (for the schools were the concern of State health authorities until the transfer in 1914) were admonished on vaccination and on the shocking condition of many school buildings.

Toward the end of the decade the Board had local figures to report that were fairly reliable and complete, although they did not give county totals. The statistics for 1888 are particularly interesting. Olean, with some 7,000 people reported 138 deaths. One was from typhoid, 11 were from diarrhea, 3 from scarlet fever, 9 from "diphtheria and croup," and 11 from "consumption." Almost one third of all deaths were due to communicable disease. The same group of diseases was responsible for only 2.5 per cent of all the deaths in our three counties in 1938, fifty years later. In those days about one third of the deaths occurred in those under five years of age. In 1938 it was one fourteenth.

An Indian woman who had been on exhibition at the International Fair in Buffalo fell sick in September, 1888, and died of smallpox on the Cattaraugus Reservation. Three other women contracted the disease and were cared for in a freshly constructed log hospital. They died and were buried without coffins. A man recovered and the hospital was burned. Meanwhile a local physician had vaccinated five hundred persons and stopped the epidemic. Three Indians ran away to the Allegany Reservation where five cases appeared. These were cared for in a shanty, with a shed for two Indian nurses. Four of the patients died.

The '90's show evidence of distinct progress in several directions. Yet in 1892 a State physician wrote of Dunkirk:

"I found a vigorous and excellent board of health. A house to house inspection has been made, and all conditions that imperil health have been suppressed. The great source of danger to this city, if cholera should appear, is that the sewage of the city is emptied into the lake less than a quarter of a mile from the intake of the water supply."

The following year a State visitor reported that Olean had a health officer, a board of health and an inspector.

"The town is well-sewered, but where sewer connections do not exist, night soil is deodorized and taken out on farms.

"The water supply is from wells near the river supplemented by water from the river. A new well is being dug but the water seems to be practically river water. . . .

"An isolated place on Fourth Street on the river has been selected for a hospital."

At that time each city or village was supposed to have some structure operating or available as a pesthouse. It was not until the Jamestown City Hospital was built in 1911 that a proper isolation pavilion was available in this area.

There was an epidemic of grippe in the State at some period of each year from 1889 to 1894, carrying off from three to eight thousand people. The testing of cattle for tuberculosis began in 1893. The program was entirely voluntary and there was no compensation for slaughtered cattle. A herd at Dunkirk was included in 1894.

For the period from 1893 through 1899, Jamestown averaged 29 deaths from "consumption" a year, a mortality of 155 per 100,000.

Communicable diseases made 1893 a terrible year for Jamestown, then with 18,627 inhabitants. Seven people died of cerebrospinal meningitis, 10 of typhoid, and 15 of diarrhea, 10 of scarlet fever, 34 of consumption, and even 2 of the malaria of pioneer days, and 109 of "diphtheria and croup." Antitoxin was only beginning to come into practical use. The following year 17 died of diphtheria in Dunkirk, with a population of 10,000 people, and 27 of meningitis.

The century turned, and diphtheria was becoming less deadly. Eleven thousand people died in the State in six months of grippe. A sewage treatment plant was recommended for Fredonia. In 1901 the State Board of Health became the State Department of Health. Jamestown had 16 deaths from typhoid in 1904, 5 from diarrhea, and even one from malaria. Two years later Wellsville had 29 cases of typhoid, traced to contamination in its well and reservoir system.

In the latter part of the first decade the historian finds he is meeting something new; he is watching the development of modern public health work. In 1907 the State Department of Health appointed a Tuberculosis Advisory Committee, including Homer Folks and Livingston Farrand. A new law required the reporting of all cases of tuberculosis.

This development of present-day public health has several features. A carefully planned campaign against tuberculosis shows what can be done to overcome one disease through early diagnosis, adequate treatment, isolation of carriers, and examination of contacts. New agents

appear in public health: the lay organization, the public health nurse, the whole-time administrator, the syphilis clinic, the public health laboratory, the county department of health, State aid, the sanitary engineer, the public health educator, the mental hygienist, and the nutritionist. These may be traced in our three counties.

The organization of local branches reflected the widespread interest in the new campaign against tuberculosis conducted by the State Department of Health and the State Charities Aid Association. In 1909 the Olean Tuberculosis Committee was formed, followed two years later by a county committee; the two merged in 1920 into a Cattaraugus County Tuberculosis and Public Health Association. Tuberculosis committees were organized at Jamestown and Dunkirk in 1909. Two years later a County Federation united these two and a number of village committees. The Allegany County Committee on Tuberculosis was organized in 1917. These groups paid for public health nurses to visit tuberculosis patients. Their value demonstrated, these nurses were later taken over by counties or cities. The groups helped get sanatoriums built and clinics held. Some still maintain fresh-air camps. They have given interest and support to general health programs.

Another lay group organized the Visiting Nurse Association of Jamestown in 1909. This organization has grown through the years, employing now six public health nurses, in addition to a supervisor, to do bedside nursing. It holds various clinics and conducts a fresh-air camp. Olean followed Jamestown closely and organized a Visiting Nurse Association early in 1910.

The Olean Red Cross Society was organized in March, 1917, and for two years was very busy with war work and with the conditions arising from the great influenza epidemic of 1918. After demobilization, however, it became interested in child welfare work in cooperation with the Olean Antituberculosis Society, which maintained two nurses and a free dispensary. The Red Cross took over bedside nursing in Olean but dropped it in 1943. From 1916 to 1920 the Dunkirk Red Cross sponsored the nurse in that city.

Today the public health nurse is indispensable. The first one appeared in this area on March 1, 1909, under the Jamestown Visiting Nurse Association. The same year the Dunkirk and the Olean Tuberculosis Committees each appointed a nurse to do antituberculosis work. The Allegany and Cattaraugus County associations followed. Sooner or later this work was taken over by public appropriation. Jamestown and Olean had city nurses in the same decade. The first school nurse was appointed in 1921, in

TABLE 2—PUBLIC HEALTH NURSES—FEBRUARY 1, 1944

	Allegany	Cattaraugus	Chautauqua
State	1		1
County	2	9	3
City			5
Village or town		$\frac{1}{2}$	1
School	13	$3\frac{1}{2}$	15
Private organization			6
Total	16	13	31
Supervisory staff	$\frac{1}{2}$	1	1

Dunkirk, Jamestown and Olean soon followed. The accompanying table groups the public health nurses today. The service in Cattaraugus County is largely generalized, in the two others nursing is largely concentrated on the school-age groups (See Table 2).

During the depression some thirty registered nurses in need in this area were employed by Works Progress Administration and assigned to the larger organizations to assist. Although untrained in public health nursing, they were very helpful. They served in the period 1934-1938.

From January 21, 1914, public health in New York took fresh strides forward, under Hermann M. Biggs. The year before he had aided with legislation which replaced the Advisory Committee with a Public Health Council having power to enact a State sanitary code. The new law also provided for twenty sanitary districts in the upstate area, each to be served full time by a physician selected under civil service. Commissioner Biggs appointed Dr. John J. Mahoney, city health officer of Jamestown, district sanitary supervisor for the Jamestown district, comprising these three counties. Local health officers were now visited frequently and were stimulated to take short courses of training in their duties. The State sanitary code began to be enforced. Today Chautauqua and Cattaraugus counties comprise the Jamestown subdistrict under Buffalo, while Allegany County is supervised from Hornell.

In 1915 the Legislature made vaccination of school children against smallpox no longer compulsory, save in cities over fifty thousand in population or in the presence of smallpox. The supervision of health work in schools was transferred to the State Department of Education.

In 1916 the efforts of the tuberculosis societies in Cattaraugus County resulted in the building by the Board of Supervisors of Rocky Crest Sanatorium on the hill south of Olean. In the same year the city of Olean organized a venereal disease clinic under the direction of Dr. L. J. Atkins. The Olean Chamber of Commerce made the establishment of full time county health service part of its program.

The same popular interest in tuberculosis which had built Rocky Crest soon led to the

erection of a larger institution in Chautauqua County. Using a bequest by Mrs. Elizabeth Newton, the supervisors opened the Newton Memorial Hospital at Cassadaga in 1920. Here Dr. Walter Rathbun's work in examining high-school students is nationally known.

The Allegany County supervisors purchased a site for a sanatorium in 1917, but no building was erected. Patients from this county were usually sent to Rocky Crest until the district State sanatorium at Mt. Morris was completed in 1937.

The State Department of Health began work in 1919 for children crippled by infantile paralysis. The first clinic in this area was held in Jamestown on September 24.

Dr. Biggs, who had long been concerned about health conditions in rural areas, succeeded in 1921 in securing legislation permitting a board of supervisors to set up a county health district covering the entire county or omitting such cities as did not vote to be included. The Milbank Memorial Fund announced that it wished to demonstrate the value of such health work in an upstate county and selected Cattaraugus County from the group of applicants. On January 10, 1923, the Board of Supervisors voted to organize a county health district, and appointed the first county board of health in New York State. Later in the month the cities of Olean and Salamanca voted to be included.

The formation and development of the County Department of Health was in large measure due to the support of Miss Lilla C. Wheeler, of Portville, a woman of vision, sympathy, and energy, who had long been interested in public health work both in the county and in the State.

The Cattaraugus County Department of Health, in serving the people of its county, has made distinct contributions to public health generally. Before the war one public health nurse was available for each 4,000 to 4,500 inhabitants. The nurse lives in her district of three or four townships, and gives a thoroughly generalized service, including school nursing and bedside nursing. From the beginning she has assisted the physician in home deliveries. This was the first rural agency in the United States to offer this service. The Olean City Laboratory, which had been organized by Dr. J. P. Garen in 1919, was taken over to serve the entire county. It combined clinical service to the practicing physician with a wide range of public health work. In close cooperation with the sanatorium, local tuberculosis clinics were set up in the district health stations, aiding early diagnosis. Dr. S. A. Douglass and later Dr. John H. Korn organized a system of careful follow-up of contacts of active cases, and of bedside consultation serv-

ice. A sanitary inspector and later a sanitary engineer, supervising the sewage disposal and the milk and water supplies of the county, became part of the staff. Birth and death certificates from the local registrars go through the county office. The Olean syphilis clinic was taken over and another was organized at Salamanca. A special health education project under Ruth E. Grout produced a handbook in this field. Dr. L. D. Bristol, Dr. S. A. Douglass, and Dr. R. M. Atwater developed a well-rounded department.

A school hygiene service was also organized in 1923, to coordinate the school health work of the county. Dr. C. A. Greenleaf, Olean school physician long associated with antituberculosis work, became director.

The board of supervisors steadily increased their support of the County Department of Health, which is long since indigenous. The Milbank Memorial Fund, which at one time devoted over \$80,000 a year to the demonstration, made its last contribution in 1940. The State Department of Health matches the county expenditures dollar for dollar. Since 1932 this matching has included the operation of the sanatorium, which then became an integral part of the department.

State aid on this scale of 50 per cent was a feature of Dr. Biggs' plan to help rural counties.

In 1923 it was extended to cover almost any phase of health activity conducted by a county. Under this law Chautauqua and Allegany counties receive aid for their county nursing services, and under a similar law for their approved laboratories.

Allegany County opened a county laboratory in Belmont in 1915. Since 1929, Dr. E. K. Kline has served as director of this laboratory as well as that of Cattaraugus County. The Jamestown Municipal Laboratory was started in 1926, and the Chautauqua County Laboratory at Dunkirk in 1938. All four are approved and receive State aid.

School districts are required by law to have medical inspectors, and may also employ school nurses. They receive State aid which may reach 85 per cent of the amount spent.

The construction of sewage treatment plants lagged far behind that of community water systems. The first disposal plants were built in 1912 at Westfield and Franklinville. Federal help in the late '30's aided many communities in building or modernizing sewer systems.

Olean, Jamestown, and Dunkirk have long had sanitary inspectors, whose work was extended to milk supplies.

Tuberculin testing of cattle, started in the early

'90's, was not put on a county-wide, compulsory basis until much later. All three counties are now under the accredited herd plan—Cattaraugus and Allegany since 1921, Chautauqua since 1923. As a result, tuberculosis of the bones and joints in children has practically disappeared.

The campaign against infectious abortion in cattle, caused by the organism which incites undulant fever in man, is repeating the steps in development of the tuberculosis campaign. Blood-testing is largely optional, and funds to assist the owner of a reacting animal are limited. Yet more and more herds are being tested.

Arranging for the care of the mentally ill is, in New York State, among the duties of the local health officer. The Willard State Hospital, opened in 1869, receives patients from Allegany County, and the Gowanda State Hospital (1898) serves Chautauqua and Cattaraugus counties. Clinics in various cities began to be organized in 1916. They serve adults with early mental disease and aid parents with child-guidance problems.

In communicable diseases several events are noted in these decades. The epidemic of influenza in the fall of 1918 swept this area, as it did the rest of the world. In September, 1929, typhoid suddenly appeared in Olean, producing, in all, 245 cases and 15 deaths. Investigation showed the epidemic was due to lax handling of the city water supply. A bond issue of \$400,000 was raised by the city to meet claims. Diphtheria, which had been growing less and less severe, was hurried out of the picture by intensive immunization of preschool children beginning in 1925.

In 1938 the three counties together had just four cases with no deaths.

The value of a strong local health organization was shown in July, 1942, when the worst flood in its history swept over Olean. Aid came from outside but it was primarily the County Department of Health, under Dr. W. R. Ames, which met the situation, and so organized the work in control of water and milk supplies and in immunization that no epidemic of any kind appeared, and not a single case of typhoid.

Looking back over this century and a half we can see how far New York, as reflected in these three counties, has come. Problems in public health still remain to be solved. The degenerative diseases of the aged are one; over half of the people who die in this area are 65 years old or over. Cancer is another. In the list belong: maternal welfare, nutrition, mental hygiene, accidents, housing, and on the horizon, arthritis. Public health organization is a problem in itself.

In the century and a half just ahead we may ex-

pect progress in all these fields and others. Each generation needs its own challenges to meet

Perhaps 2094 will think that we of 1944 were a bit on the primitive side

ARMY AND NAVY NO LONGER NEED LARGE QUININ PRODUCTION

The large scale production of quinine or totaquine, a form of quinine, is not now considered a matter of importance for the management of malaria among the Army and Navy personnel, the National Research Council's Board for the Coordination of Malarial Studies declares in an official report on the use of quinaquine (atabrine), a synthetic quinine substitute, in the prevention and treatment of malaria. The report is published in the *Journal of the American Medical Association* for August 5. Commenting on the report, the

administered, is fully as effective as quinine in the termination of the acute attack and is safer than quinine. The intramuscular injection of quinaquine is highly effective in securing a rapid therapeutic response. Evidence is not at hand to decide on the relative merits of quinaquine administered intramuscularly as compared with quinine administered intravenously in patients with fulminating cerebral malaria.

"3 In the Therapy of Vivax Malaria—Neither quinaquine nor quinine can be relied on to prevent relapses in vivax malaria following the discontinuation of therapy, attacks is significant, than following quinaquine, currently used by the armed forces.

"4 In the Therapy of Falciparum Malaria—There is convincing evidence that quinaquine not only suppresses the clinical symptoms of falciparum malaria but also cures this malignant form. The evidence of a similar curative effect of quinine is not conclusive.

"5 Totaquine (USP)—Because of its content of crystallizable cinchona alkaloids, totaquine (USP) has activity which approximates that of quinine and therefore can be used as a substitute for quinine when given orally. The antimalarial activity of totaquine (USP) is dependent on the amount of crystallizable alkaloids in the preparation rather than on the specific amount of each individual alkaloid. Gastrointestinal disturbances occur more frequently following the use of the present totaquine (USP) than they do following the use of quinine or quinaquine.

"On the basis of the foregoing statement, it is resolved:

"1 That no advantage, and possible disadvantage, would accrue to the armed forces were quinine or totaquine to replace quinaquine for the routine suppression and treatment of malaria.

"2 That the large scale production of quinine or totaquine is not now considered a matter of importance for the management of malaria among Army and Navy personnel. It is possible that a supply of totaquine in excess of the present stockpiles may be required for therapy in civilian populations temporarily under the jurisdiction of the armed forces in occupied territory where immediate dissemination of information concerning the use of quinaquine (atabrine) is not practicable. In this connection it should be kept in mind that after the war the over all need for all established antimalarial drugs will continue to be great."

BOARD FOR THE COORDINATION OF MALARIAL COUNCIL REPORT

R. F. Dittus, Lieut. Col. (MC), AUS, A. R. Dochez, OSRD, E. G. Håkansson, Capt. (MC), USN, E. K. Marshall, Jr., O. R. McCoy, Maj. (MC), AUS, F. T. Norris, Lieut. Comdr. (MC), USN, W. H. Schell, USPHS, J. A. Shannon, and G. A. Caden, Jr., Secretary.

prevention, should be able to eliminate malaria from every civilized nation. That would be, indeed, a blessing derived from the most destructive and costly war the world has ever known.

The most common form of the disease in temperate countries is vivax malaria, named after the species of the malaria parasite which causes the benign tertian form in which the attacks of chills, fever, and sweating occur every other day. It rarely causes death. The most severe form is falciparum malaria, which is more prevalent in the tropics and is responsible for practically all deaths due to malaria although it lends itself to treatment if recognized early. It is named after another species of the malaria parasite.

The official report published in the *Journal* says: "On May 31, 1941, the Board for the Coordination of Malarial Studies adopted the following resolution concerning the relative value to the armed forces of quinaquine hydrochloride, USP (atabrine) and quinine."

At hand justifies the following statement:

"1 In the Suppressive Therapy—Quinaquine (atabrine) has proved to have all the antimalarial properties ascribed to quinine in the suppression of malaria during and subsequent to exposure to infected mosquitoes. Effective suppression can be accomplished over long periods of time by proper use of quinaquine. Available evidence indicates that this end may be achieved without danger to the individual.

Earlier reports indicated a significant incidence of gastrointestinal disturbances in certain groups of men receiving suppressive quinaquine therapy. For practical purposes, these adverse reactions can be avoided by proper administration of the drug. Quinine, in doses adequate to assure suppression of malaria equivalent to that produced by quinaquine in the dosage currently used by the armed forces, is frequently attended by symptoms of cinchonism.

Quinaquine has been demonstrated to prevent consistently the development of falciparum malaria when the drug is administered in proper dosage before, during, and after exposure.

"2 In the Therapy of the Acute Attack—Experience in the past two years has demonstrated conclusively that quinaquine (atabrine), when properly

## Special Article

### DIPHTHERIA IN AN "ADEQUATELY" IMMUNIZED COMMUNITY

BERWYN F. MATTISON, M.D., M.P.H., Kingston, New York

THE protection level against diphtheria for any community may be taken as the summation of its natural and its artificial immunization levels. These are not the only factors governing the incidence of the disease, for certainly the prevailing contact rate (a measure of crowding, population flux, and social interchange) is also important as well as the virulence of the prevailing strain of *Corynebacterium diphtheriae*. Possibly there is also some degree of nonspecific immunity varying with nutritional and general health standards. But the two kinds of specific diphtheria immunization are our principal safeguards.

The relationship of these two factors is not constant. During the past twenty years we have seen a marked decrease in incidence of the disease. This has been concomitant with and undoubtedly conditioned by the increasing use of various artificial immunizing agents. It was pointed out by Godfrey in 1932<sup>1</sup> that the age of the children so treated was of prime importance in achieving a general community protection against epidemics. Thus it was the experience in several localities that outbreaks continued in spite of the artificial protection of over 50 per cent of the school-age youngsters, but when to that was added 30 per cent or more immunizations among preschool children, a striking decline occurred in the community as a whole.

Recently (1940) an analysis<sup>2</sup> of the changing relationship of natural and artificial diphtheria immunity has indicated that in 1922 immunization of 30 per cent of the children under 5 years of age would have resulted (with the then existing rates of natural immunization) in about 52 per cent of that population being protected. But in 1938, with the much lower rate of natural immunization, 55 per cent of the group under 5 would have to be artificially immunized to achieve the same level of community protection.

This is the natural consequence of vastly decreased diphtheria prevalence during that interval, with its associated lowering of carrier frequency and hence of subclinical exposure or infection which might stimulate natural immunity. As community experience with the disease decreases, it would seem that our administration of diphtheria toxoid must increase to compensate for it.

The present report deals with a small outbreak of diphtheria which occurred between October, 1943, and March, 1944, in an upstate New York city whose previous history with regard to natural and artificial immunity is unusually complete. Kingston, New York (1940 census population 28,589), had been the site of an extensive Schick survey in 1922 and again in 1938,<sup>2,3</sup> together with a carrier survey at the later date. The data obtained in these studies formed the basis of the estimate mentioned above as to the degree of increase in toxoid administration necessary to counteract a lessening natural resistance to the disease. Only 2 cases of diphtheria had been reported in the city in the ten years preceding the outbreak.

Table 1 shows the incidence of reported cases during the outbreak. From the first appearance of cases intensified efforts were made by the City Health Bureau to secure immunization of the preschool group. During January and February this was supplemented by a school clinic program during which nearly every child of school age was given either a complete course of alum-precipitated toxoid (two 1 cc. doses at three-week intervals) or a restimulation dose if they had been previously protected three or more years before.

TABLE 1.—OCCURRENCE OF DIPHTHERIA CASES BY MONTH OF ONSET

October	November	December	January	February	March
3	4	11	5	1	4
Total number of reported cases—28					

As is seen in Table 2, the cases occurred predominantly among school-age children. There was no definite aggregation of cases in any one school district, or in any one part of the city. Information regarding milk supplies was secured on all cases and again there was no undue association of cases with any one supply. Seven patients had a history of household contact prior to their onset; and 21 were apparently "primary" cases.

With the first reported cases, laboratory examinations of throat cultures increased sharply. It became apparent from these numerous examinations, mostly on contacts and symptomatic patients, that a considerable number of

<sup>1</sup>District Health Officer, Kingston, New York.

TABLE 2.—OCCURRENCE OF DIPHTHERIA CASES BY AGE OF PATIENT

Age of Patient	Number of Reported Cases
All ages	28
Under 5 years	1
5-9 years	11
10-14 years	10
15-19 years	2
20 years and over	4

passive carriers were present in the city. Table 3 shows the number of examinations done each month, and the number of carriers (of virulent *C. diphtheriae*) and cases discovered. This is in marked contrast to the 1938 survey results (1 virulent culture out of 3,223 examined).

In all of the cases cultured the diphtheria organism was predominant and frequent checks were made on blood agar plates to rule out streptococci and other causative agents. In the carriers, *C. diphtheriae* were occasionally present together with various other organisms.

TABLE 3.—THROAT CULTURES EXAMINED AND CASES AND PASSIVE CARRIERS DISCOVERED ACCORDING TO MONTH OF OUTBREAK

Month	Total Number of Cultures	Total Persons Cultured	Number of Positive Persons	Cases	Carriers
Total	1,525	718	63	28	35
September	8	8			
October	50	34	3	3	
November	365	202	16	4	12
December	425	160	14	11	3
January	356	145	23	5	18
February	191	96	2	1	1
March	130	73	5	4	1

The nature of the disease, in general, was mild, especially where toxoid had been given at some earlier date. In only about half a dozen of the cases were there marked constitutional symptoms, but in all of those reported definite local lesions occurred. Most frequently these were on the tonsils or fauces; no laryngeal cases were observed. The administration of antitoxin was prompt in most instances. There were no deaths, and, to date, there have been no late cardiac or nervous complications.

As usual, considerable difficulty was encountered in clearing up both cases and carriers bacteriologically. A variety of local applications was tried and 7 of the cases only became negative for *C. diphtheriae* after tonsillectomy. The median interval between the first positive culture and the second negative release culture for 28 of the patients on whom information is complete was thirty-eight days; the same interval for 24 passive carriers was fourteen days.

Control measures consisted of isolating cases and quarantine of child's household contacts as required by the Sanitary Code; intensification of preschool immunization, which was in-

creased 500 per cent over the same period for the previous year; and immunization of 2,684 grade-school children (1,868 were restimulations)—representing about 80 per cent of that age group.

At the time of the school immunization clinics a survey was done to determine the past immunization status of each child. The results give an unusually complete picture of the artificial protection pattern in the age groups included. Table 4 is based on an analysis of the findings in five schools picked at random and including 1,160 children between 4 and 15 years of age. Most of the recorded immunizations had been done with toxoids produced by the Division of Laboratories and Research of the New York State Department of Health.

TABLE 4.—SCHOOL CHILDREN SURVEYED IN JANUARY, 1944, REGARDING HISTORY OF PREVIOUS DIPHTHERIA IMMUNIZATION

Age	Total	Previously Immunized	Not Previously Immunized	Percentage with History of Earlier Immunization
All ages	1,160	866	294	74.7
4 years	26	17	9	65.5
5 years	81	69	12	85.3
6 years	114	82	32	71.9
7 years	131	91	40	69.5
8 years	117	50	37	68.4
9 years	141	109	32	77.4
10 years	147	109	38	74.2
11 years	144	114	30	79.2
12 years	116	89	27	76.8
13 years	67	55	12	82.1
14 years	50	34	16	68.0
15 years	26	17	9	65.4

It is of interest to note that below the age of 13 years more than 30 per cent of each age group was known to have received immunization before the age of 5 years (Table 5).

TABLE 5.—PROPORTION OF CHILDREN WHO HAD RECEIVED DIPHTHERIA IMMUNIZATION BEFORE THE AGE OF 5 YEARS

Age at Survey	Total	Immunized	Immunized Before the Age of 5	Percentage
All ages	1,160	866	571	49.3
4 years	26	17	17	65.5
5 years	81	69	62	76.5
6 years	114	82	69	60.5
7 years	131	91	71	54.2
8 years	117	80	56	47.9
9 years	141	109	59	56.8
10 years	147	109	70	47.6
11 years	144	114	65	45.2
12 years	116	89	42	36.2
13 years	67	55	19	28.4
14 years	50	34	14	28.0
15 years	26	17	6	23.1

These figures supplement and confirm the reported immunizations of children under 5 years as recorded by the State Department of Health. The latter are expected to be somewhat lower, owing to incomplete reports from private physicians of their toxoid injections. Table 6 gives the



TABLE 6.—PROPORTION OF ESTIMATED POPULATION UNDER 5 YEARS REPORTED IMMUNIZED AGAINST DIPHTHERIA, KINGSTON, NEW YORK, 1935-1944

Year	Percentage of Children Under 5 Years Reported Immunized
Jan. 1, 1935	48
Jan. 1, 1936	51
Jan. 1, 1937	51
Jan. 1, 1938	53
Jan. 1, 1939	55
Jan. 1, 1940	57
Jan. 1, 1941	54
Jan. 1, 1942	52
Jan. 1, 1943	44
Jan. 1, 1944	46

estimated proportion of the population of Kingston under 5 years reported as immunized for each of the past ten years.

In view of the drop of reported preschool immunizations at the beginning of 1943 to a figure well below the 55 per cent level laid down in 1940 as the new danger line, it might have been expected that an outbreak would occur, but presumably the preschool group would have suffered had that been the principal cause. As we have seen, the cases actually fell predominantly in the 5-14 year age span.

Two additional observations may be relevant. First, of the 866 children in this group who had been immunized, definite information as to the date of immunization was secured on 755: 544, or 72.0 per cent, were known to have been given their injections more than five years before the outbreak.

Distributing the 111 immunizations known to have been done, but with no date of administration according to the same proportion—80 of these were probably performed more than five years earlier. Thus we may assume that 624 of the immunized group had been inoculated more than five years before.

According to some investigators,<sup>4,5</sup> as many as a third of those immunized with one dose of A.P. toxoid will have lost that protection five years after administration. At this rate at least 208 of the immunized group (if they received the then prevailing dosage: 1 A.P. or 2 fluid toxoid injections) would again be susceptible. This would mean a protection level no higher than 57.7 per cent instead of 74.7 per cent among the school-age children.

This loss of artificial immunity, in the absence of natural immunizing forces in the community, and in the absence of systematic re-stimulation doses of toxoid prior to the outbreak, may have been a major factor in the recurrence of the disease.

The second observation has to do with the nature of the immunizing procedures used in those persons who became ill. The artificial

TABLE 7.—HISTORY OF IMMUNIZATION IN 28 DIPHTHERIA CASES, KINGSTON, NEW YORK, 1943-1944

Year of Im- munization	—Immunizing Material and—						Agent Unknown	Not Im- munized
	Fluid Toxoid		Alum-Precipi- tated Toxoid,		Number of Doses	Doses		
	Number of		Number of					
	Doses	3	Doses	2				
1939	..	2	..	4	..	..	10*	
1938	..	..	..	1	2	..	..	
1937	..	..	..	1	..	..	..	
1936	..	..	..	2	..	..	..	
1935	..	1	..	1	..	2	..	
1934	..	3	..	..	..	..	..	
Not known	..	..	..	..	..	1	..	
Total	..	4	..	9	2	3	..	

\* One patient who had one dose of A.P. toxoid three weeks before onset, and the second dose the day before onset, is included.

immunization history of each case is summarized in Table 7.

Of the 18 patients who had been protected, definite information was available regarding the preparation and dosage in 15 instances.

Nine of these were given one dose of A.P. toxoid, and 4 were given two doses of fluid toxoid. Only 2 of the entire 28 patients had been given the currently recommended two doses of A.P. toxoid, and in both instances it was given five years before the outbreak.

## Summary

After being virtually free from diphtheria for ten years, Kingston, New York, suffered an epidemic of 28 cases between October, 1943, and March, 1944. Previous studies in this city had demonstrated a very low carrier rate (0.03 per cent) and a decreasing natural immunity. An analysis of the immunization histories of 1,160 school children indicated a history of past immunization in 75 per cent; reported immunizations among preschool children at the beginning of 1943 indicated that 44 per cent of them were protected.

The epidemic occurred predominantly in school-age children all of whom had either not been protected, had been given less than the currently recommended toxoid dosage, or had been immunized five or more years earlier with no subsequent restimulation. With the available data it is not possible to know whether the outbreak was due to some one or a combination of all of these factors.

## Conclusions

The decreasing prevalence of diphtheria has brought with it decreasing natural resistance to the disease. Levels of artificial immunization formerly adequate to protect a community may no longer suffice. Suggested steps to maintain

the necessary level of community protection include higher preschool protection rate, reimmunization of all children on entrance to school, administration of complete courses (two doses of A P toxoid or three doses of fluid toxoid) in every individual immunized

## References

- 1 Godfrey E S, Jr. *Am J Pub Health* 22 237 (March) 1932
- 2 Stebbins E L. *Am J Pub Health* 30 36 (March) 1940
- 3 Stebbins E L, Ingraham H S and Chant H L. *New York State J Med* 40 658 (April 15) 1940
- 4 Toomey J A. *JAMA* 119 18 (May 2) 1942
- 5 Volk V K and Bunney W D. *Am J Pub Health* 32 630 (July 3) 1942

## IF POLIO STRIKES

Usually this will include recruiting of the needed medical services and the organization of your community's resources

or the purpose of so that medical While conditions will vary in different communities, any epidemic will create such a burden that all your resources may well be needed. Duplication can be avoided by careful planning with the state, county, city and local health, medical, and social agencies.

Because August and September are the peak epidemic months, we suggest you arrange now with your county and city health officers to inform you immediately of any increase of infantile paralysis in your area.

Advise these officers that your Chapter stands ready to assist them in rendering the maximum of aid to the people. To plan a unified program, suggest that a meeting be called of the local health officers, with officers of your Chapter and the State Representative of the National Foundation, and other persons such as the president of the County Medical Society, chiefs of staff and superintendents of all hospitals, editors of newspapers, the directors of the Crippled Children's Service, Public Health Nursing supervisors and Visiting Nurse or District Nurse Associations. There, the Chapter may outline its resources and services as well as those of the headquarters of the National Foundation.

### What Your Chapter Can Do

- 1 Make sure that no victim of infantile paralysis goes untreated because of lack of funds, regardless of age, race, creed, or color
  - 2 Pay all or any part of hospitalization costs as needed
  - 3
  - 4
  - 5
- consultation services, and medical and surgical equipment

— consult all pirators (For locations of those

nearest you, consult your publication No 24 "Repurators—Locations & Owners") If unable to

patients including and taxi or private car service for medical checkup in the post-isolation period

10 Employ clerical workers + health + grooms

12 Hire kitchen and floor helpers  
13 Serve as a cleaning house for volunteer personnel

14 Recruit nurses' aides or other lay volunteers to cut and prepare picks under proper professional supervision

15 Establish a telephone registry at Chamber

ing the serious strain on hospital wires

16 Supply literature for physicians and nurses. Provide widespread distribution of the "Bulletin" (When Polio Strikes—Helpful Hints for Everyone)

17 Arrange with local press and radio stations to issue appeals for wool, waterproof materials, wringers, washing machines, tubs, electric fans, footboards, etc., if they are needed

18 Arrange meetings and conferences in cooperation with Health Department and Medical Society

### What the National Foundation Will Do

1 Advise such additional funds to the Chapter as may be needed

2 Supply additional professional personnel upon the request of local medical and health authorities

3 Ship recipients from strategic locations upon request

4 Supply woolen material for hot packs free of charge

5 Supply splints free of charge—National Foundation News, National Information for Infantile Paralysis, 120 Broadway New York, New York Telephone BEckman 3-0500

## CHRISTMAS SEAL DRIVE TO OPEN NOVEMBER 20

The 1944 Christmas Seal Sale of the National Tuberculosis Association will open on November 20 and continue until Christmas. The annual Christ-

mas Seal Sale is the sole support of the National Tuberculosis Association and its 2,500 affiliated associations throughout the country.

# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman (428 Greenwood Place, Syracuse); George Baehr, M.D., and Charles D. Post, M.D.*

## "Penicillin Therapy"

POSTGRADUATE instruction in penicillin therapy will be given to the Nassau County Medical Society on October 31 at 9:00 p.m. at the Mercy Hospital auditorium in Rockville Centre. The speaker will be Dr. Frank L. Meleney, associate

professor of clinical surgery at the College of Physicians and Surgeons, Columbia University.

This instruction is presented as a cooperative endeavor between the Medical Society of the State of New York and the State Department of Health.

## Cortland County Society Holds Postgraduate Meeting

MISCELLANEOUS postgraduate instruction has been arranged for the Cortland County Medical Society, to be given Friday evenings at 8:30 p.m. at the Cortland County Hospital in Cortland.

On October 20 Dr. Albert G. Swift, professor emeritus of surgery and chairman and active head of the department of surgery at Syracuse University College of Medicine, will speak on "Surgical Lesions

on the Biliary Tract." The lecture on November 17 will be "Infections of the Genitourinary Tract," by Dr. Leo E. Gibson, professor of clinical surgery (urology) at Syracuse University College of Medicine. The lecture given by Dr. Gibson is presented as a cooperative endeavor by the Medical Society of the State of New York and the New York State Department of Health.

## Cancer Teaching Day in Ithaca

A CANCER teaching day will be held at Hermann M. Biggs Memorial Hospital, Ithaca, on October 17, under the auspices of the Medical Society of the County of Tompkins, the Medical Society of the State of New York, and the Division of Cancer Control of the New York State Department of Health.

Afternoon Meeting: 4:00 p.m.

1. Carcinoma of the Colon.

John Garlock, M.D., attending surgeon, Mt. Sinai Hospital, New York City.

2. Bone Tumors.

John J. Morton, M.D., chief surgeon, Strong Memorial Hospital, Rochester.

Evening Meeting: 7:30 p.m.

1. Epithelioma of the Skin.

Andrew H. Dowdy, M.D., associate professor of radiology, the University of Rochester School of Medicine and Dentistry.

2. Carcinoma of the Breast.

Frank E. Adair, M.D., executive officer, Memorial Hospital, New York City.

Dinner will be served at 6:30 p.m. at Hermann M. Biggs Memorial Hospital. The local committee consists of Joseph N. Frost, M.D., ex officio; Robert H. Broad, M.D.; Raymond D. Fear, M.D.; N. Stanley Lincoln, M.D.; Ralph J. Low, M.D.; Francis J. McCormick, M.D.; Henry B. Sutton, M.D.; and Willets Wilson, M.D.

## Tropical Medicine

POSTGRADUATE instruction in tropical medicine was given at a meeting of the St. Lawrence County Medical Society held September 14, at the Hepburn Hospital Auditorium, Ogdensburg.

Dr. Stockton Kimball, associate in medicine and pharmacology, University of Buffalo School of Medicine discussed the diagnosis and treatment of malaria and the dysenteries.

Luncheon at 12:15 p.m. at the Crescent Hotel preceded the lecture.

Postgraduate instruction in tropical medicine was

also given at a meeting of the Jefferson County Medical Society which was held at 6:30 p.m., September 14, at the Black River Valley Club, Watertown.

Dr. Kimball was again the speaker; he discussed the diagnosis and treatment of malaria and the dysenteries.

The programs were presented as a cooperative endeavor between the Council Committee on Public Health and Education of the Medical Society of the State of New York and the New York State Department of Health.

## Instruction in Psychiatry

POSTGRADUATE instruction in psychiatry was given to the Otsego County Medical Society at a meeting held at 6:30 p.m. on September 13, at the Tuna Cliff Inn, Cooperstown.

Dr. Foster Kennedy, professor of clinical medi-

cine, Cornell University Medical College, spoke on the neuroses as related to the manic-depressive constitution.

This program was presented under the auspices of the Medical Society of the State of New York.

# Thirty-Eighth Annual Meetings

## of the District Branches of the Medical Society of the State of New York

### PROGRAMS\*

#### First District Branch

Tuesday, October 24, 1944

Bellevue Hospital

28th Street and First Avenue

New York City

#### FOREWORD

A guide map of Bellevue Hospital will be found in the center pages of the printed program

Business meeting and election of officers will be conducted at 1:30 P.M.

#### MEDICINE

##### *First (Columbia) Medical Division*

9:45-11:30 A.M.—Conference with Presentation and Discussion of Cases

Dr. I. Ogden Woodruff and Staff  
(Ground A—A & B Building)

11:30-1:00 P.M.—Clinicopathologic Conference  
Drs. I. Ogden Woodruff and David M. Spain and Staff

(Ground A—A & B Building)

2:00-4:00 P.M.—Ward Rounds with Presentation and Discussion of Selected Cases

Dr. I. Ogden Woodruff and Staff  
(Ward A-3 and A-4—A & B Building)

#### CHEST DISEASES

9:00-10:30 A.M.—Ward Rounds (Medical)

Dr. J. Burns Amberson  
Ward D-2—C & D Building)

11:00-12:30 P.M.—Ward Rounds (Surgical)  
Dr. Adrian V. Lambert and Dr. J. Burns Amberson

(Ward C-5—C & D Building)

##### *Second (Cornell) Medical Division*

8:15-11:00 A.M.—Ward Rounds

Dr. Asa Lincoln and Staff  
(Ground B—A & B Building)

2:15-4:00 P.M.—Casualty Conference

Dr. John Richards  
(Ground A—A & B Building)

#### NEUROLOGY

10:00-12:00 NOON—Conference—Arachnoiditis Following Spinal Anesthesia

Dr. Foster Kennedy and Staff  
(Ward FI—F & G Building)

3:00-5:00 P.M.—Ward Rounds  
Dr. Foster Kennedy and Staff  
(FI & GI—F & G Building)

#### *Third (New York University) Medical Division*

2:15-4:30 P.M.—Round-Table Conference with

1. "The Treatment of Acute Myocardial Infarction"—Dr. Arthur C. DeGraff

2. "The Treatment of Thyrotoxicosis"—Dr. Elaine P. Rath

3. "The Clinical Use of Demerol"—Dr. R. C. Batterman

4. "The Treatment of Acute Myocardial Infarction"—Dr. Arthur C. DeGraff

5. "The Treatment of Acute Myocardial Infarction"—Dr. Arthur C. DeGraff  
(Ground A Class Room—A & B Building)

#### PEDIATRICS

2:15-4:30 P.M.—Round-Table Conference with

1. "The Treatment of Acute Myocardial Infarction"—Dr. Arthur C. DeGraff

2. "The Treatment of Thyrotoxicosis"—Dr. Elaine P. Rath

3. "The Problems of Adolescence"—Dr. Harry Bakwin

4. "Poliomyelitis"—Dr. Alfred Fischer

5. "Childhood Tuberculosis"—Dr. Edith Lincoln  
(G-6 Conference Room—F & G Building)

#### SYPHILOLOGY and DERMATOLOGY

"The Treatment of Industrial Dermatoses"—Dr. Frank Combes  
(Stewart Amphitheatre—I & K Building)

#### *Fourth (New York University) Medical Division*

9:00 A.M.-12:00 NOON—Presentations

1. "Treatment of Hyperthyroidism with Thiouracil"—Dr. Harry A. Solomon

2. "Newer Developments in the Treatment of Meningococcal Meningitis"—Dr. Emanuel Appelbaum

\* Programs for the annual meetings of the other District Branches appeared in the September 1 and September 15 issues.—Editor

3. "Penicillin in the Treatment of Empyema"—  
Dr. Emanuel Appelbaum
4. "The Importance of Heredity in Medical Disorders"—Dr. Max Trubek
5. "Chrysotherapy in Rheumatoid Arthritis"—  
Dr. Otto Steinbrocker  
(Ground A—A & B Building)

#### SURGERY

##### *First (Columbia) Surgical Division*

8:30-11:00 A.M.—Operations

Dr. C. J. MacGuire  
Dr. Roderick V. Grace  
Dr. Gaston A. Carlucci  
Dr. Philip C. Potter

(K-5—I & K Building)

10:30-1:00 P.M.—Ward Rounds

Dr. Walter W. Fischer  
Dr. Vincent Hurley  
Dr. Wallace Sheridan  
Dr. Louis Davidson

Wards L-5, L-6, and M-6—L & M Building)

##### *Second (Cornell) Surgical Division*

8:30-11:00 P.M.—Operations by Dr. Guilford Dudley and Staff

(K-5—I & K Building)

11:00 A.M.—12:30 P.M.—Staff Conference

Dr. Guilford Dudley and Staff

(M-4 Library—L & M Building)

#### UROLOGY

10:00 A.M.—12:00 NOON—Operations by Dr. Howard Jeck and Staff

K-6—I & K Building)

##### *Third (New York University) Division*

9:00-11:00 A.M.—Abdominal and General Surgery  
Dr. W. Howard Barber, Dr. Hippolyte M. Wertheim, Dr. Thomas J. Galvin, Dr. Victor Carabba, and Dr. Samuel Standard

(K-5 Operating Room—I & K Building)

9:00-11:00 A.M.—Fractures

"Rounds with Demonstration of Various Methods of Treatment"—Dr. Irwin E. Siris and Dr. John A. Lawler

(K-2—I & K Building)

#### SURGICAL RESEARCH

10:30-11:00 A.M.—Lantern Slide Demonstration:  
"Studies of Surgical Convalescence"—Dr. Co-Tui and Dr. George R. Gerst

(I & K Amphitheatre—Ground Floor, I & K Building)

11:00 A.M.—12:30 P.M.—Surgical Staff Conference

Dr. Arthur M. Wright, Director

(I & K Amphitheatre—I & K Building)

#### ANESTHESIA

9:30 A.M.—12:00 NOON—Therapeutic Nerve Block, Incidence of Postoperative Anesthetic Complica-

tions, Reflex Circulatory Derangement During Surgery

Anesthetic Clinics

Nerve Block—Therapeutic

a. Lumbar

b. Sympathetic

c. Paravertebral

Suprascapular for Painful Shoulder

Other cases available

Dr. E. A. Rovenstine, Director of Anesthesia  
(K-6—I & K Building)

#### OPHTHALMOLOGY

9:00-11:00 A.M.—Grand Rounds

Dr. Daniel B. Kirby

Dr. Donald W. Bogart

(Ward K-1—I & K Building)

##### *Fourth (New York University) Surgical Division*

##### *Adult Surgical Service*

9:00 A.M.—12:00 NOON

Operative Clinic

Drs. Arthur McQuillan, William Hinton, Kenneth Lewis, and Lester Breidenbach

(K-5—I & K Building)

Ward Rounds

Dr. Roland Maier

(Ground L & M and L-1—L & M Building)

##### *Orthopedic Service*

9:00 A.M.—12:00 NOON—Ward Rounds

Drs. Arthur Krida, John McCauley, William Walker, and Albert Schein

(I-6 and I-7—I & K Building)

##### *Children's Surgical Service*

2:00-5:00 P.M.—Operative Clinic

Drs. Fenwick Beekman, Philip Allen, and Charles W. Lester

(K-5—I & K Building)

#### Officers—First District Branch

President.....James G. Morrissey, M.D., Yonkers

First Vice-President.....

.....Scott Lord Smith, M.D., Poughkeepsie

Second Vice-President.....

.....Harold F. Morrison, M.D., Tuxedo Park

Secretary.....I. J. Landsman, M.D., Bronx

Treasurer.....Henry W. Miller, M.D., Brewster

#### Presidents of Component County Societies

Bronx.....Frederick W. Williams, M.D., Bronx

Dutchess.....Harry A. LaBurt, M.D., Wingdale

New York...Conrad Berens, M.D., New York City

Orange.....Walter I. Neller, M.D., Middletown

Putnam...Alexander Vanderburgh, M.D., Brewster

Richmond...D. V. Catalano, M.D., West Brighton

Rockland...Harold S. Heller, M.D., Spring Valley

Westchester.....

.....Merwin E. Marsland, M.D., Mamaroneck

## *Special Notice*

### Members of Eighth District Branch

It has become necessary to change the hotel in which the Eighth District Branch meeting at Niagara Falls will be held on Thursday, October 5, 1944.

Instead of the Hotel Niagara, the place will be the PROSPECT HOUSE—JEFFERSON AVENUE AT SECOND STREET, Niagara Falls, New York.

# Association of Military Surgeons of the United States

Fifty-second Annual Meeting—November 2-4, 1944

Hotel Pennsylvania, New York City

## PROGRAM

### Symposium on Medicine at War

(Georgian Room)

November 2

10 00 A M

Call to Order Col Charles M. Wilson, (MC), USA,  
Chairman

National Anthem Orchestra

Invocation Col J. Burt Webster, Chaplain,  
Second Service Command

Addresses of Welcome

Maj Gen T. A. Terry, Commanding General,  
Second Service Command

Honorable Fiorello H. LaGuardia, Mayor of New  
York City

Dr. Arthur Chace, President, New York Academy  
of Medicine

Dr. Conrad Berens, President, New York County  
Medical Society

Response

Presidential Address

Col. Lucius A. Salisbury, (MC), N Y N G, Inspect-  
tor General Department

Introduction of Distinguished Foreign Guests

Addresses of the Surgeons General

Navy—Vice-Admiral Ross T. McIntire, (MC),  
Surgeon General, U S Navy

U S P H S—Thomas Parran, M D, Surgeon  
General, U S Public Health Service

Army—Maj Gen Norman T. Kirk, (MC), Sur-  
geon General, U S Army

Veterans—Brig Gen Frank T. Hines, Adminis-  
trator, Veterans Administration

Business Meeting 12 00 NOON

2 00 P M - 4 00 P M

*Symposium on War Surgery*

PRESIDING OFFICER

Brig Gen Raymond W. Bliss, (MC), Chief of the  
Operations Service, Office of the Surgeon General,  
U S Army

"Surgery in Forward Military Echelons"

Brig Gen Fred W. Rankin, (MC), Chief Consult-  
ant in Surgery, Office of the Surgeon General,  
U S Army

"Wartime Experience in the Treatment of Burns"

Capt Frederic L. Conklin, (MC), USN, Medical  
Officer in Command, U S Naval Hospital, Chel-  
sea, Massachusetts

"Plastic and Reconstruction Surgery"

Lt Comdr Clarence R. Straatsma, (MC),  
USNR, U S Naval Hospital, Brooklyn

"Rehabilitation by the Army Dental Corps"

Lt Col John C. Brauer, D C, Assistant to Direc-  
tor, Dental Division, Office of the Surgeon Gen-  
eral, U S Army

"The Reconditioning Program in the United States  
Army"

Col Augustus Thorndike, (MC), Director, Re-  
conditioning Division, Office of the Surgeon Gen-  
eral, U S Army

November 3

9 00 A M - 11 00 A M

PRESIDING OFFICER

Maj Gen David N. W. Grant, (MC), Air Sur-  
geon, Army Air Forces, Washington, D C.

*Symposium on Chemotherapy*

"The Present Status of Penicillin Therapy"

Dr. Chester S. Keefer, Wade Professor of Medi-  
cine, Boston University School of Medicine

"Present Status of the Sulfonamides"

Capt William W. Hall, (MC), USN, Bureau of  
Medicine and Surgery, Navy Department, Wash-  
ington, D C

"The

Br

sul

U S Army

"Equine Encephalomyelitis of the Virus Type"

Col Raymond Randall, (VD), Director, Army  
Veterinary School, Army Medical Center, Wash-  
ington, D C

"J

matic Fever"

(MC), Chief Medical  
Air Surgeon, Army

2 00 P M - 4 00 P M

Department

"The Malaria Control Program of the United States  
Army"

Brig Gen James S. Simmons, (MC), Chief, Pre-  
ventive Medicine Service, Office of the Surgeon  
General, U S Army

"Chronic Relapsing Malaria in the United States  
Army"

Assist-  
ant, Navy

Lt. Col. Francis R. Dieuaide, (MC), Chief, Tropical Disease Treatment Branch, Office of the Surgeon General, U.S. Army

**"Relationships of Neuropsychiatry to General Medicine and Surgery in the Army"**

Col. William C. Menninger, (MC), Chief Consultant in Neuropsychiatry, Office of the Surgeon General, U.S. Army

**"The Problem of Morale"**

Maj. Gen. G. B. Chisholm, (MC), C.B.E., E.D., Director General of Medical Services, Department of National Defence-Army, Ottawa, Canada

**"Rickettsial Diseases"**

Dr. R. E. Dyer, Director, National Institute of Health, U.S. Public Health Service, Bethesda, Maryland

November 4

9:00 A.M.-11:00 A.M.

**PRESIDING OFFICER:**

Dr. Warren F. Draper, Deputy Surgeon General, U.S. Public Health Service, Washington, D.C.

**"Medical Problems in the European Theatre of Operations"**

Brig. Gen. Charles C. Hillman, Chief, Professional Service, Office of the Surgeon General, U.S. Army

**"Medical Problems of Air Warfare"**

Col. M. S. White, (MC), Director, Aero Medical Department, AAF School of Applied Tactics, AAF Tactical Center, Orlando, Florida

**"Public Health Problems in Theatres of Operation"**

Brig. Gen. S. Bayne-Jones, (MC), Deputy Chief, Preventive Medicine Service, Office of the Surgeon General, U.S. Army

**"Medical Problems of Submarine Warfare"**

Capt. Charles W. Shilling, (MC), USN, Officer in Charge, Medical Research Laboratory, Submarine Base, New London, Connecticut

**Closing Remarks**

Col. Charles M. Walson

Col. Lucius A. Salisbury

**Panel Discussions**

**MEDICINE AND SURGERY**

November 2

4:30 P.M. to 6:00 P.M.

*Wounds, Fractures, and Amputations*  
(Georgian Room)

Dr. Frederick W. Bancroft  
Consultant in Surgery, Veterans Administration, New York City

Lt. Col. Franklin E. Walton, (MC)  
Chief of Surgical Service, Vaughan General Hospital, Hines, Illinois—"War Wounds"  
Lt. Col. Stephens Graham, (MC), AUS  
Consultant in Surgery, Second Service Command, ASF, Governors Island, New York

Maj. Karl F. Mech, (MC)  
Chief of Penicillin Section, and Assistant to the Chief of the Orthopaedic Section, Halloran General Hospital, Staten Island, New York

*Neuropsychiatric Problems*  
(Parlor 1)

Lt. Col. Douglas Thom, (MC), AUS  
Consultant in Neuropsychiatry, Second Service Command, ASF, Governors Island, New York

Col. J. D. Griffin, R.C.A.M.C.  
Consultant Psychiatrist, Directorate of Medical Services, National Defense Headquarters, Ottawa, Canada

Dr. Harry C. Solomon  
Medical Director, Boston Psychopathic Hospital, Boston, Massachusetts

Col. William C. Menninger, (MC), USA  
Chief Consultant in Neuropsychiatry, Office of the Surgeon General, U.S. Army, Washington, D.C.

*Venereal Diseases*  
(Parlor 2)

Dr. J. E. Moore  
Chairman of the Committee on Venereal Diseases, National Research Council, 804 Medical Arts Building, Baltimore, Maryland

Lt. Col. Thomas H. Sternberg, (MC)  
Director, Venereal Disease Control Division, Preventive Medicine Service, Office of the Surgeon General, U.S. Army, Washington, D.C.—"Venereal Disease in the Army"

Comdr. Walter H. Schwartz, (MC), USN  
In charge of Venereal Disease Control, Division of Preventive Medicine, Bureau of Medicine and Surgery, Navy Department, Washington, D.C.—"Venereal Disease Control in the Navy"

Dr. J. R. Heller, Jr.  
Medical Director, Chief, Venereal Disease Division, U.S. Public Health Service, Washington, D.C.—"Venereal Disease Studies of the USPHS"

Dr. J. F. Mahoney  
Medical Director, Venereal Disease Research Laboratory, U.S. Marine Hospital, Stapleton, Staten Island, New York

Capt. William Leifer, (MC)  
In charge of Research Project on Treatment of Syphilis with Penicillin, Regional Hospital, Fort Bragg, North Carolina

November 3

11:30 A.M.-1:00 P.M.

*Penicillin and Sulfonamide Therapy*  
(Georgian Room)

Dr. Francis G. Blake  
President, Board for the Investigation of Epidemic Diseases, 333 Cedar Street, New Haven, Connecticut

Major John H. Dingle, (MC), AUS  
Director, Commission on Acute Respiratory Diseases, Board for Investigation of Epidemic Diseases, U.S. Army, Fort Bragg, North Carolina—"Chemotherapy of the Coccid Infections"

Captain William W. Hall, (MC), USN  
Bureau of Medicine and Surgery, Navy Department, Washington, D.C.

Dr. Chester S. Keefer  
Wade Professor of Medicine, Boston University School of Medicine, Boston, Massachusetts

[Continued on page 2148]



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*when the going gets tough*

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[Continued from page 2146]

*Plastic and Reconstruction Surgery*  
(Parlor 1)

- Lt. Col. James Barrett Brown, (MC), AUS  
In charge of Plastic Surgery, Valley Forge General Hospital, Phoenixville, Pennsylvania
- Capt. Camille M. Shaar, (MC), USN  
Chief of Surgery, U.S. Naval Hospital, Philadelphia, Pennsylvania—"External Fixation of Fractures"
- Capt. Bradford Cannon, (MC), AUS  
Valley Forge General Hospital, Phoenixville, Pennsylvania—"Plastic Reconstruction of Defects of the Hand"
- Lt. Comdr. R. Straatsma, (MC), USNR, U.S. Naval Hospital, Brooklyn, New York

*Neurosurgical Problems in the Armed Forces*  
(Parlor 2)

- Capt. Winchell M. Craig, MC-V(S), USNR  
Chief of Surgery, Naval Hospital, National Naval Medical Center, Bethesda, Maryland

November 3

4:30 P.M. to 6:00 P.M.

*Tropical Diseases in War Theaters*  
(Georgian Room)

- Col. George R. Callender, (MC), USA  
Army Service Forces, Army Medical Center, Washington, D.C.
- Brig. Gen. James S. Simmons  
Chief, Preventive Medicine Service, Office of the Surgeon General, U.S. Army
- Dr. Rolla E. Dyer  
Director, National Institute of Health, U.S. Public Health Service, Bethesda, Maryland
- Comdr. James J. Sapero, (MC), USN  
Bureau of Medicine and Surgery, Navy Department
- Lt. Col. Francis R. Dieuaide, (MC)  
Chief, Tropical Disease Treatment Branch, Office of the Surgeon General, U.S. Army

*Reconditioning Program of the Army and Navy*  
(Manhattan Room)

- Col. Howard A. Rusk, (MC)  
Chief, Convalescent Training Division, Office of the Air Surgeon, Hq. Army Air Forces, Washington, D.C.
- Col. Augustus Thorndike, (MC)  
Director, Reconditioning Division, Office of the Surgeon General, U.S. Army
- Col. Oliver Niess  
Office of the Air Surgeon, Washington, D.C.
- Dr. Dean A. Clark  
Office of Vocational Rehabilitation, U.S. Public Health Service, Washington, D.C.
- Capt. Howard Montgomery, (MC), USN  
Bureau of Medicine and Surgery, U.S. Navy
- Dr. George Deaver  
Professional Physical Education, Institute for Crippled and Disabled, New York City

*Shock, Blood Substitutes, and Blood Derivatives*  
(Parlor 1)

- Capt. Lloyd R. Newhouser, (MC), USN  
In Charge Blood Substitute Division, Navy Medical School, National Naval Medical Center, Bethesda, Maryland

Dr. Max M. Strumia

Director, Clinical Laboratory, Bryn Mawr Hospital, Bryn Mawr, Pennsylvania—"Management of Shock with Plasma and Other Blood Derivatives or Substitutes"

Lt. Col. Douglas B. Kendrick, Jr.

Special Representative of the Surgeon General on Transfusions and Plasma, Army Medical Center, Washington, D.C.—"Management of Shock Under Combat Conditions"

Brig. Gen. Fred W. Rankin, AUS

Chief Consultant in Surgery, Office of The Surgeon General, U.S. Army

*Aviation Medicine*  
(Parlor 2)

- Brig. Gen. Eugen G. Reinartz  
Commandant, School of Aviation Medicine, Randolph Field, Texas
- Col. M. S. White  
Surgeon, Aero-Medical Division, School of Applied Tactics, AAF Tactical Center, Orlando, Florida

*DENTAL CORPS*

November 2

4:30 to 6:00 P.M.

*Army and Navy Dental Problems in the Foreign Theaters*  
(Parlor A)

- Comdr. F. C. Hildebrand, (DC), USNR  
U. S. Naval Training Station, Sampson, New York—"Dental Service on an Air Craft Carrier"
- Lt. Col. Clare T. Budge, D.C.  
Chief of Dental Service, Ashford General Hospital, White Sulphur Springs, Virginia—"China-Burma-India Theater"
- Lt. Col. George F. Jeffcott, D.C.  
Dental Surgeon, U.S. Military Academy, West Point, New York—"Middle East Theater"

November 3

11:30 A.M.-1:00 P.M.

*War Dentistry*  
(Parlor A)

- Dr. Lloyd Y. Beers  
Assistant Medical Director, in Charge Dental Division, Veterans Administration, Washington, D.C.
- Capt. C. V. Rault, (DC), USN  
District Dental Officer, Headquarters, Third Naval District, New York City—"The Naval Dental Corps in Wartime"

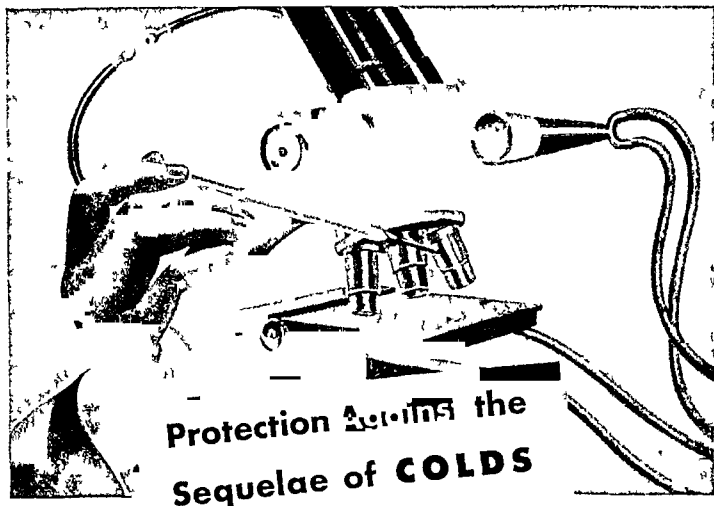
November 3

11:30 A.M.-1:00 P.M.

*War Dentistry*  
(Parlor A)

- Lt. Col. Clinton T. Brann, (DC)  
Dental Surgeon, Aberdeen Proving Ground, Maryland—"Dental Service in an Army Camp"
- Lt. Comdr. F. K. Etter, (DC), USN  
U.S. Naval Dispensary, Navy Department, Washington, D.C.—"The U.S. Navy Dental Officer Afloat and Ashore in Combat"

(Continued on page 2150)



Acting against the organisms of secondary invasion, which are responsible for more serious phases of colds,

## ORAVAX

Oral Catarrhal Vaccine Tablet

has proved valuable in rendering colds less severe, and shortening their duration. Clinical reports show

Number of severe colds and total days illness from severe colds in Oravax group only one fifth that in control subjects

—*Journal Lancet* 60 319 324 (1940)

Complete freedom from colds in

81 92% of Oravax group, 12 34% of control group.

—*J M A Georgia* 28 332 334 (1939)

Only one half as much time lost per person per cold in Oravax group as in control group

—*Canad M A J* 41 493 (1939)

Oravax is simple, painless, free from severe reactions. Each small, enteric coated tablet contains fifty billion killed organisms of high antigenicity. Dosage is one tablet daily for 7 days, then one tablet twice weekly throughout season when colds are most prevalent.

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City

State

# ASSOCIATION OF MILITARY SURGEONS' PROGRAM

continued from page 2148]

November 3

4:30 to 6:00 P.M.

War Dentistry  
(Parlor A)

ault, (DC), USN  
Dental Officer, Headquarters, Third  
District, New York City

Beers  
Medical Director, In charge Dental  
Veterans Administration, Washington,  
Present Dental Objectives and Policies of  
Veterans Administration

Thomas P. Fox, (DC)  
Dental Service, Woodrow Wilson General  
Hospital, Staunton, Virginia—"Dental Service in  
General Hospital"

George W. Christiansen, (DC), USNR  
Dental School, National Naval Medical  
Center, Bethesda, Maryland—"Penicillin in Oral  
Surgery"

VETERINARY CORPS

November 2

4:30 to 6:00 P.M.

Veterinary Corps Food Inspection Functions  
(Parlor B)

Seth C. Dildine, (VC)  
Headquarters Veterinarian, Field Headquarters  
Perishable Branch Subsistence Division, Office of  
the Quartermaster General, Chicago, Illinois—"  
Inspection of Fresh Meat, Meat Food, and  
Dairy Products"

J. H. K. Moore, (VC)  
Office of the Surgeon General, U.S. Army, Wash-  
ington, D.C.—"Organization and Operation of the  
Veterinary Corps Food Inspection Service"

Col. Fred C. Waters, (VC)  
Depot Veterinarian, Chicago Quartermaster De-  
pot, Chicago, Illinois—"Inspection of Canned and  
Cured Meat and Meat Food Products"

November 3

11:30 A.M.—1:00 P.M.

Milk and Dairy Plant Inspection  
(Parlor B)

Col. H. K. Moore, (VC)  
Office of the Surgeon General, U.S. Army

Maj. Clarence J. Babcock, Sn. C.  
Veterinary Division, Office of the Surgeon Gen-  
eral, U.S. Army, Washington, D.C.—"The Army's  
Milk Supply and Problems Incident to Procure-  
ment and Inspection"

Col. Raymond Randall, (VC)  
Director, Army Veterinary School, Army Medical  
Center, Washington, D.C.—"Comments on  
Laboratory Examination of Milk and Dairy  
Products"

November 3

4:30 to 6:00 P.M.

Veterinary Service with Animals  
(Parlor B)

MacKellar, Jr., (VC)  
General, U.S. Army, Wash-  
ington, D.C.—"The Present

Maj. Thomas C. Jones, (VC), USA  
Front Royal Quartermaster Depot (Remount),  
Front Royal, Virginia—"Research in Animal  
Diseases at the Veterinary Research Laboratory,  
Army Remount Depot, Front Royal, Virginia"

SANITARY CORPS ACTIVITIES

November 2

4:30 to 6:00 P.M.  
(Parlor C)

Col. W. A. Hardenbergh, Sn.C.  
Director, Division of Sanitary Engineering, Office  
of the Surgeon General, U.S. Army

November 3

11:30 A.M.—1:00 P.M.  
(Parlor C)

Brig. Gen. James S. Simmons, (MC)  
Chief, Preventive Medicine Service, Office of  
the Surgeon General, U.S. Army, Washington,  
D.C.—"Sanitary Corps Functions in Preventive  
Medicine"

Lt. Col. Raymond Hussey, (MC)  
Commanding Officer and Director, Army Indus-  
trial Hygiene Laboratory, Johns Hopkins Uni-  
versity, Baltimore, Maryland—"Industrial Hy-  
giene"

November 3

4:30 to 6:00 P.M.  
(Parlor C)

Col. W. A. Hardenbergh, Sn.C.  
Director, Division of Sanitary Engineering, Office  
of the Surgeon General, U.S. Army, Washington,  
D.C.—"Overseas Sanitary Engineering"

Capt. James B. Baty, Sn.C.  
Chief, Water Supply Branch, Sanitary Engineer-  
ing Division, Preventive Medicine Service, Office  
of the Surgeon General, U.S. Army, Washington  
D.C.—"Special Sanitary Engineering Problems"

Lt. Col. Robert N. Clark, Sn.C.  
Assistant Chief, Preventive Medicine Branch  
Office of the Surgeon, Headquarters, First Service  
Command, Boston, Massachusetts—"Sanitar  
Engineering in a Service Command"

Maj. W. M. Culley, Sn.C.  
Service Command Sanitary Engineer, He-  
dquarters, Second Service Command, Govern-  
ment Island, New York—"Sanitary Engineering in  
Army Camp"

ACTIVITIES OF THE MEDICAL ADMINISTRATIVE C

November 2—4:30 to 6:00 P.M.

Training Duties of M.A.C. Officers  
(Conference Room 2)

Lt. Col. Seth O. Craft, P.C.  
Executive Officer, Hospital Construction I  
Hospital Division, Office of the Surgeon C  
U.S. Army, Washington, D.C.

November 3—11:30 A.M.—1:00 P.M.

Utilization of M.A.C. Officers in the Hospital  
(Conference Room 2)

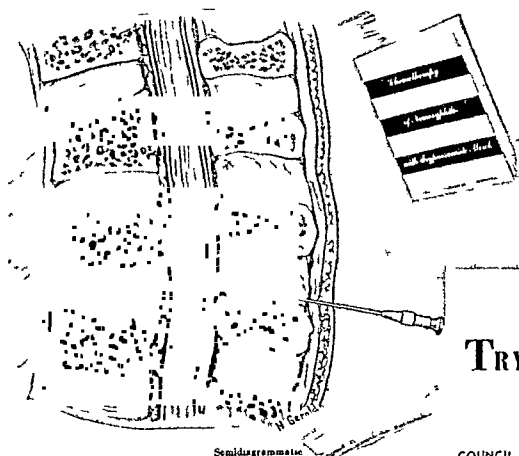
Lt. Col. W. A. Emond, P.C.  
Executive Officer; Chief Adm. Br., Hea  
Second Service Command, Governors Is  
York—"General Policies of the Office  
of a Service Command Relative t  
ization of M.A.C. Officers"

# In the Management of Asymptomatic and Paretic NEUROSYPHILIS

Statistical studies reveal that approximately thirty per cent of syphilitic patients exhibit abnormalities in the spinal fluid during initial examinations, without displaying clinical symptoms of cerebrospinal involvement. Although adequate routine treatment of early syphilis will prevent the appearance of abnormalities in most cases, the use of Tryparsamide Merck combined with hyperthermy, is suggested in resistant cases.

In incipient cases of dementia paralytica, the use of Tryparsamide Merck, combined with artificial fever therapy, is known to produce varying degrees of symptomatic improvement. While favorable results may not be expected in more advanced cases of general paresis or tabes dorsalis, when treatment is begun sufficiently early and continued over a long period of time, Tryparsamide Merck may arrest deterioration and contribute to the prolongation of life.

The effectiveness of Tryparsamide Merck in the treatment of resistant cases of syphilis probably is due to its unusual ability to penetrate the meningo-vascular barrier of the central nervous system.



The illustrated brochure,  
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of Neurosyphilis*,  
will be sent on request

## TRYPARSAMIDE MERCK

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*An outstanding  
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# Medical News

## Hospital Charges for X-Ray, Pathology, Anesthesia, and Physical Therapy

*Back in 1926 there was a Court of Appeals' decision in the Sausser case, defining "Roentgenology" as not being of the practice of medicine.*

*Dr. David J. Kaliski, some two years ago, drew up comments on that decision. These are here presented for reference.—Editor*

### Comments on the Decision of Chief Justice Hiscock in matter of *Sausser v. Department of Health, City of New York*, 242 N.Y. 66.

In this action before the Court of Appeals, the proprietor of an x-ray laboratory who was also a chiropractor made an application for a license to operate an x-ray laboratory in the City of New York pursuant to Section 107 of the Sanitary Code, which provides:

"No person shall maintain, operate, or conduct an x-ray laboratory . . . wherein radiographs are taken, diagnoses made, or human beings examined or treated by x-rays, without a permit therefore issued by the Board of Health, or otherwise than in accordance with the terms of said permit and with the regulations of the said Board."

Supplementary to this Section, the Board of Health of the City of New York adopted a regulation providing:

"Every x-ray laboratory shall at all times be in charge of and under the direction of a duly licensed physician or other person whose knowledge, experience, and qualifications to operate and use an x-ray machine are satisfactory to the Health Department."

In the decision the learned Justice stated that there was a provision in the sanitary code and the regulations of the Board of Health to the effect that a person other than a duly licensed physician whose knowledge, experience, and qualifications to operate and use an x-ray machine are satisfactory to the Health Department, "may obtain a license." The petitioner, Sausser, made an application for a permit under these regulations stating, in his petition, that he desired to take radiographs and did not wish to participate in the making of diagnoses or to treat patients. His formal application filed with the Department of Health sustains this claim.

The learned Justice states that the Department of Health and the (lower) Courts have proceeded on an entirely different and inapplicable theory in denying the petitioner's application. They assumed that the petitioner proposed to diagnose and treat conditions of the spine. The correspondence and affidavits submitted conceded the petitioner's experience and skill as an x-ray operator. "They could not well do otherwise in view of the facts set out in his petition," said the Court. "They (the lower Courts and Health Department) assume, however, that the petitioner proposes to diagnose and treat diseases of the spine; that his status as a chiropractor is not recognized as giving him any standing in the medical profession or any qualifications for diagnosing and treating diseases and that, therefore, his application should be denied." The Court held that this theory and view were entirely inapplicable as a reason for denying a permit to the petitioner. The Court accepted his statement that he *did not propose* to diagnose or treat but only to *take* x-ray pictures and *explain* what these pictures show in the way of obvious physical conditions of the spine;

and which pictures would then be used, if at all, by some other person in connection with diagnosis and treatment. Although the Court accepted the statement of the petitioner that he did not propose to diagnose or treat, it did state that he desired to take x-ray pictures and *explain* what those pictures showed in the way of "obvious physical conditions."

I submit that even if the petitioner's statement that he did not desire to diagnose or treat is accepted, the fact that the Court admitted he intended to explain what the x-ray pictures showed in the way of "obvious physical conditions of the spine" is tantamount to diagnosis, under the definition of the practice of medicine under the *Education Law* of the State of New York.

Section 1250 of the *Education Law*, paragraph 7, states: The practice of medicine is defined as follows:

"A person practices medicine within the meaning of this article, except as hereinafter stated, who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity, or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity, or physical condition."

In order to "explain" what an x-ray film shows the radiologist must, of necessity, be possessed of formal knowledge in physiology, anatomy, and pathology. The explanation of what an x-ray picture shows is, without question, diagnosis under the *Medical Practice Act*. A person, in order to explain what an x-ray picture shows, cannot do so alone without a knowledge of the normal skeleton and functioning of the body organs, and must also be possessed of necessary clinical knowledge and experience in various branches of medical science only gained by years of education and training. In actual practice, an x-ray photograph is of no value to the possessor, even if properly taken, unless he has been trained in the interpretation of such x-ray photograph. The progress of radiology has been such, in the course of the last quarter of a century, that many pathologic conditions can be detected by a person properly educated and trained in this medical specialty.

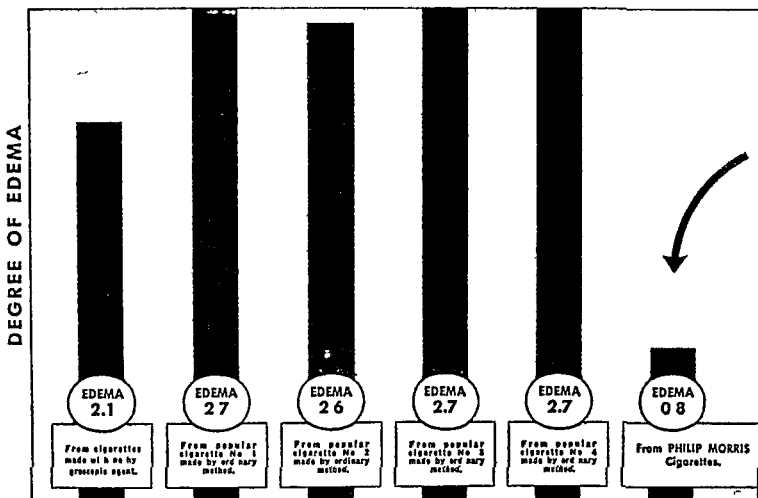
Many diseases caused by infections, metabolic, hereditary, traumatic, and other causes are disclosed by x-ray examinations. This requires a formal knowledge of the medical sciences which can only be gained by a thorough education and training such as is possessed by a qualified physician.

It is conceded that a lay technician may become expert in the use and application of x-rays in the taking and processing of radiographs or x-ray pictures. In fact, many such lay persons are employed to carry out certain technical examinations

[Continued on page 2154]

# A PICTURE

*that means more than a thousand words*



## HOW IRRITATION VARIES FROM DIFFERENT CIGARETTES

Tests made on rabbits' eyes reveal the influence of hygroscopic agents

**CONCLUSION:\*** Results of these tests show that regardless of blend of tobacco, added materials, or method of manufacture, the irritation produced by ordinary cigarettes is *measurably greater* than that caused by PHILIP MORRIS.

**CLINICAL CONFIRMATION:\*\*** On men and women smokers with throats irritated by smoking, PHILIP MORRIS have been shown to be *definitely* less irritating

# PHILIP MORRIS

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\*N. Y. State Journ. Med. 35 No 11,590 \*\*Laryngoscope 1935, XLV, No. 2, 149-154

TO THE PHYSICIAN WHO SMOKES A PIPE: We suggest an unusually fine new blend—Country Doctor Pipe Mixture Made by the same process as used in the manufacture of Philip Morris Cigarettes

[Continued from page 2152]

with or without the help of the physician and in the processing of the x-ray films. This is the equivalent of the assistance which nurses and laboratory technicians render to qualified physicians in their daily work. But the fact that a person is so technically proficient is not the equivalent to stating that such person, though qualified in a special way or in a limited degree, is qualified without the necessary medical training required of a licensed physician to interpret or explain (diagnose) the findings revealed on an x-ray film. So to hold would be dangerous to the public health and would permit any person technically proficient in the taking or processing of x-ray films other than a duly qualified physician to interpret and explain the findings on an x-ray film, and thus practice medicine.

Many diseases may be detected in their incipency by x-ray examinations by qualified examiners, and to permit an unqualified individual not so educated and experienced to practice under the exceptional provisions of the regulations set up by the Department of Health would be inimicable to the welfare and well-being of the people of this State.

The statement of the learned Justice that "Certainly taking an x-ray photograph is not diagnosis or treatment," while in itself correct, is contrary to all experience, if the taking of such film is coupled with the right to explain the findings of such picture. The explanation of what an x-ray photograph shows is a vital part in the total diagnosis of many conditions confronting the physician.

The Justice further states that "An x-ray photograph would not show much to an ignorant and inexperienced eye. To one who is skillful and has understanding it would show a certain location or external condition of the spine, for instance, and I do not think that the explanation of what was thus shown would go beyond the limits of x-ray photography any more than the explanation of what appeared to be a blotch or shadow upon an ordinary photograph would go beyond the limits of ordinary photography."

The Justice was undoubtedly confused or ignorant as to the purpose and value of an x-ray examina-

tion as compared with the reading of an ordinary photograph. No lay person can be skillful and have understanding in order to determine the "location or condition of the spine" nor give an explanation of "the condition" present, any more than a person looking at an ordinary photograph would be able to determine what certain abnormalities on the photograph meant in terms of medical diagnosis. An x-ray film may be of no value whatsoever even to a licensed physician who is not also qualified in interpreting the findings and evaluating them. The purpose of the physician in referring a patient for x-ray examination is to obtain a proper diagnosis based upon the skill and experience of the radiologist. Even qualified physicians recognize their limitations and depend upon the expert experience and training of the radiologist in taking and interpreting x-ray films and in establishing a diagnosis either by confirmation or the clinical findings or their negation. In the light of clinical medical experience a negative x-ray finding may be as important as positive findings.

Again, the mere description of a shadow or line in an x-ray film may be of little value to an inexperienced person or unqualified practitioner. It may mean a fracture or a healed fracture or a congenital condition or some other disease or condition and may require expert knowledge for proper interpretation. Without proper interpretation, no matter how skilled in the technic of taking and processing an x-ray film a person may be, there is little or no value to the procedure; indeed, there is the potential danger that an incipient lesion detrimental to the health of the individual may be overlooked or that an actual lesion in the shape of a break in continuity of a bone may be attributed to force or trauma when in fact there may be another underlying pathologic condition, such as malignancy or syphilis.

The decision in the Sausser case is an anachronism and not in accordance with present-day concepts of the expert nature of medical diagnostic radiology, which is without doubt the practice of medicine as defined in the Medical Practice Act of this State.

DAVID J. KALISKI, M.D.

### Dewey Names Board to Study Medical Care

GOVERNOR Thomas E. Dewey appointed on September 5 the members of a temporary commission, created by the 1944 Legislature, on his recommendation, to make necessary studies "in order to devise programs for medical care for persons of all groups and classes in the State."

The aim is to provide proper medical care for the needy at public expense, without embracing elements of socialized medicine. This was stated by Mr. Dewey in a memorandum accompanying his appointments.

"Of the many fields in which the social services extended by the state and local governments have been so progressively extended," he said, "the field of medical care has received least attention."

"The program has been delayed in solution by the difficulties in finding a middle ground between the extreme views of those who desire to socialize the medical profession and those who oppose all broadening of medical care."

Dr. Basil C. MacLean, of Rochester, until recently a lieutenant colonel in the Army Medical Corps, was appointed by the Governor to head the commission as chairman. Assemblyman Lee B. Mailer,

Republican, of Cornwall-on-Hudson, was named vice-chairman.

Nine other members were appointed by the Governor. They are the Rev. John J. Bingham, assistant secretary of the Catholic Charities of the Archdiocese of New York; Dr. Lucien Brown, formerly of Harlem Hospital and now connected with Sydenham Hospital, both in New York City; Dr. Robert Levy, professor of clinical medicine in the College of Physicians and Surgeons of Columbia University; Garrard B. Winston, New York lawyer, Under Secretary of the Treasury from 1923 to 1927; Miss Agnes Gelinap, professor of nursing in the Skidmore College Department of Nursing; Dr. George MacKenzie, of Cooperstown, physician-in-chief at Mary Imogene Bassett Hospital there; Dr. Herman Gates Weiskotten, of Syracuse, member of the New York State Public Health Council; Miss Ruth Hall, of Buffalo, chairman of procurement and assignment for the New York State Nurses Association; and Miss Marion Sheehan, of Albany, director of the Division of Public Health Nursing of the State Health Department.

[Continued on page 2156]

**TABLETS FOR Oral USE—**  
**AMPULS FOR Injection**

There has long been a real need for a potent, mercurial diuretic compound which would be effective by mouth. Such a preparation serves not only as an adjunct to parenteral therapy but is very useful when injections can not be given.

After the oral administration of Salyrgan-Theophylline tablets a satisfactory diuretic response is obtained in a high percentage of cases. However, the results after intravenous or intramuscular injection of Salyrgan-Theophylline solution are more consistent.

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[Continued from page 2154]

There are four members from the Legislature, Senators Lester Baum, Manhattan (Republican), and Lazarus Joseph, Bronx (Democrat), and Assemblymen Mailler and Leonard Farbstein, Manhattan (Democrat). The State Commissioners of

Health, Social Welfare, and Mental Hygiene are ex-officio members.

Governor Dewey's announcement followed closely on the announcement by Mayor F. H. LaGuardia of the incorporation of his health-insurance plan for all New Yorkers earning up to \$5,000 a year.

### Medical Center Here to Get Mental Clinic

THE Columbia University Department of Psychiatry will open a psychoanalytic and psychosomatic clinic for training and research this month at the Columbia-Presbyterian Medical Center, Dr. Willard C. Rappleye, dean of the faculty of medicine, announced.

Physicians who are graduates of approved medical schools and who have completed approved hospital internships of at least a year will be admitted to the three-year course of resident graduate training.

The course will include lectures, seminars, clinical conferences, and supervised clinical work in the psychoanalytic and psychosomatic fields, combined

with two years of resident graduate study in other branches of psychiatry. Emphasis will be placed on related basic medical sciences. The degree will be Doctor of Medical Science.

The clinic will be supervised by Dr. Nolan D. C. Lewis, executive officer of the Department of Psychiatry at Columbia and director of the New York State Psychiatric Institute and Hospital. Dr. George E. Daniels was named chief of psychosomatic service. Dr. Sandor Rado will be director of the clinic and chief of psychoanalytic service. Both are clinical professors of psychiatry. Assistants will include Drs. David M. Levy and Abraham Kardiner.

### Says Evils of Political Medicine Are Shown by New York State Setup

THE management of the Department of Mental Hygiene of the State of New York provides an example of what the American people may expect if political medicine ever takes over general medical care in this country, the *Journal* of the American Medical Association declares in its September 2 issue. The *Journal* says:

"When an epidemic of amebic dysentery occurred in the Creedmoor State Hospital in New York in March, 1943, Gov. Thomas E. Dewey appointed a commission to investigate the management and affairs of the Department of Mental Hygiene of the State of New York and the institutions operated by it.

"That report, which has just been made available, emphasizes again the defects that seem inseparable from political medicine. In 1942 New York mental hospitals were caring for 83,053 patients at an annual cost of \$30,474,048.08. The commission found everywhere signs of inadequate examination of mental defectives, unsatisfactory recording of physical conditions on admission, and lack of professional care, owing largely to the use of an undermanned professional staff. 'The emphasis

in all the institutions has been on administration at the expense of clinical medicine,' says the report. This is the familiar criticism of all types of political medicine. In the mental hospital service in New York State advancement went to 'careerists' and not to the psychiatrists of wide experience and knowledge. New methods of treatment such as shock and physical therapy disturbed the routine of the institutions and were therefore neglected. The report indicates that this service had not attracted competent physicians. Nurses were insufficient in numbers, and defective in quality and were assigned to administrators and their families rather than to patients. The diets were monotonous and were not supervised by dietitians. Research and education were neglected or isolated in bureaucratic subdivisions apart from the treatment of patients. Here were all the apparently inevitable evils of mass medical treatment. Here were all the faults that usually accompany compulsory political care. Here, in miniature, is a picture of what the American people may expect if political medicine ever takes over general medical care in this country."

### County News

#### Albany County

Dr. Elizabeth M. Gardiner, director of the State Health Department's Division of Maternity, Infancy, and Child Hygiene, retired from state service, effective August 31.

Dr. Gardiner has devoted practically her entire professional career to the promotion of maternal and child health, the greater part in the service of New York State. From 1919 until the fall of 1923 she was director of the Division of Child Welfare in the Rhode Island Department of Health. During the past twenty-one years she has been associated continuously with the New York State Department of Health, first as associate director of the Division of Maternity, Infancy, and Child Hygiene and since 1926 as its director. Under her leadership, there was notable expansion in medical and nursing activities for the health protection of mothers and young children and in the fields of nutrition education and dental care. She was responsible for the develop-

ment in New York of official programs implemented through federal funds allotted to the several states for the extension of maternal and child health services under the Sheppard-Towner Act and the Social Security Act.

During Dr. Gardiner's administration, the publications issued by her division on maternity and infant care have become standard works of reference in homes all over the State. Thousands of expectant mothers and mothers of young children, many of them referred by their family physicians, have learned to look upon her and her staff as friendly counselors to whom they may turn for information and advice on such matters as preparation for maternity and care of their babies. Outstanding among the services developed under Dr. Gardiner's direction have been those in the field of nutrition.

Coincident with the sharp nationwide drop in maternal mortality during the period 1933-1940,

[Continued on page 2158]



## TO SHORTEN THE PERIOD OF *Convalescence*

More than so-called tonics and restoratives, Ovaltine can materially shorten the period required for the return of strength and vigor following recovery from infectious or prolonged illnesses. During the acute stages of febrile diseases, when the patient's nutritional intake is low and requirements higher than normal, many metabolic deficits are developed. These can be made good only by a high intake of essential nutrients during the recovery period,

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CALCIUM . . .	.25 Gm.	1.104 Gm.	.25 mg.	1.278 mg.
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IRON . . .	10.5 mg.	11.94 mg.	.5 mg.	.5 mg.

\*Each serving made with 8 oz. milk; based on average reported values for milk.

(Continued from page 2156)

the New York State rate decreased by 52 per cent, the degree of improvement having been greater than in most of the other states. The 1943 rate (20 per 10,000 live and stillbirths) was the lowest ever experienced in this State. While many factors contributed to this downward trend, as well as to the marked decline in infant mortality, the advance made may be attributed in part to efficient administration of progressive maternity and child health services.

Dr. Gardiner has made many warm friends, both within the Department and throughout the State, who extend to her hearty wishes for happiness in her retirement. She plans to remain in Albany and the Department looks forward to her continued interest in its work and to the opportunity of her counsel in problems relating to the health of mothers and children.—*Health News, Sept. 11, 1944*

### Erie County

The following excerpt is from the *Buffalo News* of August 25, 1944:

A discovery by two University of Buffalo and Meyer Memorial Hospital physicians which opens a new and long-sought approach in the war against tuberculosis is announced today in the scientific journal, *Science*.

The development, a green mold which inhibits the growth of tuberculosis germs, was found by accident in an icebox in the U. B. Medical School while the two investigators were seeking a mold which might be effective against tuberculosis.

As a result of their discovery, Dr. David K. Miller, chief of medicine at the hospital and professor of medicine in the Medical School, and Dr. Albert C. Reke, resident in medicine at the hospital and hospital assistant on the school's staff, have received a \$7,500 grant from the Office of Scientific Research and Development to continue the research.

The mold probably is akin to penicillin and was discovered in almost the same manner, but it is only a distant relative, for penicillin has thus far been unsuccessful in fighting tuberculosis. Preliminary experiments have revealed that the new mold impedes the growth of tuberculosis germs both in germ cultures and in experimentally infected guinea pigs.

It was a germ culture that brought about the discovery. Drs. Miller and Reke were surprised one day to find that the culture of tubercle bacilli stored in an ice-box had been overgrown by the strange mold.

They took subcultures of the mold and tested them on other cultures of the deadly germ. At room temperature, the fungus growth feasted on the germ cultures—even growing faster than on other kinds of food.

Thereupon the physicians studied its effect on tuberculosis in animals. They took recently isolated, rapidly growing strains of human-type tubercle bacilli and mixed suspensions of these with suspensions of the mold. They permitted the mixture to stand at room temperature for twenty-four to forty-eight hours.

Then they injected the resulting concoction into guinea pigs. In thirteen experiments seven guinea pigs failed even to be infected by tuberculosis, although normally such injections of the bacilli would have been fatal. (Six guinea pigs did die.) All but one of the control animals that had been injected with untreated germs perished. Examination of the culture tubes indicated the mold had checked growth of the tubercle bacilli without destroying them, for even after several months the bacilli were found still present in the tubes. This is like the action of penicillin and the sulfa drugs, which inhibit growth but don't kill germs.

The doctors found that the mold is sufficiently potent so that its suspensions destroy the potency of tuberculin within two hours. Tuberculin is a sterile liquid which has as its basis the poison which tuberculosis germs produce.

Experiments using extracts of the mold and of the fluid produced by centrifuging it are now in progress in an effort to isolate the germ-inhibiting factor in the mold. The doctors would not comment on these studies.

Although other investigators have reported no success thus far against tuberculosis with penicillin, the mold product which has been so remarkably effective against a wide variety of other bacterial diseases, a report last month from the United States Naval Hospital at Corona, California, said penicillin had been used effectively in two cases of human empyema. This is a tuberculosis complication, a pus formation caused by invasion of streptococci and staphylococci in the covering of tubercular lungs.

### Jefferson County

The regular monthly meeting of the county

society was held September 14 at the Black River Valley Club.

Dinner was served at 6:30 P.M. "Malaria and the Dysenteries" was the title of an address by Dr. Stockton Kimball, assistant in medicine, University of Buffalo College of Medicine.

Announcement was made that the Jefferson-Lewis Medical Care Plan of the Farm Security Administration was withdrawn, as of September 1, 1944. Membership cards will therefore no longer be honored.

### Monroe County

Drs. S. W. Clausen, A. B. McCoord, and C. P. Katsampes, of the departments of pediatrics and bacteriology at the University of Rochester, have developed a new technic of infecting rats and mice with tuberculosis. They pointed out at the meeting of the American Chemical Society, which was held in New York City in September, that one of the serious handicaps of science in the search for a drug that would conquer tuberculosis has been the lack of an animal in which the disease could be produced in a form resembling that found in man.

The three doctors found that they were able to infect rats and mice by putting tubercle bacilli mixed with salt water into their nostrils. When the rodents breathed the germs were drawn into their lungs. Two weeks later forty of the rats began to die. The disease appeared to have remained localized in the lungs, so the investigators believe their method of infecting rats and mice will aid in the study of the disease.\*

### Montgomery County

Dr. William J. Ryan, director of the Montgomery Sanatorium since December 3, 1942, has submitted his resignation to the Board of Managers of the Sanatorium, effective September 30.

Dr. Ryan plans to enter private practice in Syracuse, his home city, as soon as his successor is named.

Although the names of several physicians have been submitted as possible successors to the director of the tubercular sanatorium, no action has yet been taken by the board of managers. The resignation of Dr. Ryan was accepted with regret, and members of the board expressed their sense of loss of his leaving, in view of his extensive accomplishments in the eradication of the disease in the county.\*

Dr. Norbert Fethke announces the opening of his office for the practice of the medical profession, limited to the care and treatment of diseases of the eye, at 54 Church Street, Amsterdam.

Dr. Fethke was born in Poland and received his early training in the field of chemistry at Danzig. Later he continued these studies under one of the greatest scientists of the time, Dr. Fischer, who was awarded the Nobel prize in 1929.

In the year 1931 Dr. Fethke was accepted by the Pasteur Institute in Paris. He received his medical education at the University of Paris and graduated in natural sciences at the Sorbonne.

For several years prior to the war Dr. Fethke was connected with the Pasteur Institute and attended the well-known clinics in Paris, like Lariboisière and the eye clinic at Hotel Dieu. He is the author of several medical publications.

Dr. Fethke served with the Polish army at the

Asterisk indicates that item is from a local newspaper.

[Continued on page 2160]

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\* A New Type of Medication to be used in Bronchial Asthma and other Allergic Conditions—New Eng J Med 223 843-846, 1940

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[Continued from page 2158]

front in France. After passing through Spain and Portugal he arrived in the United States in 1942.

In this country he was engaged in research at Yale University, New Haven, Connecticut, and later attended the eye clinic in the Polyclinic Hospital in New York. At present he is associated with the Albany Medical College.\*

#### Nassau County

The September meeting of the county society took the form of a golf tournament and stag dinner at the Wheatley Hills Golf Club in East Williston, Long Island, on Wednesday, September 20.

#### New York County

Two New York medical men, Dr. Colter Rule and Dr. Axtell E. Johnson, both of the College of Physicians and Surgeons of Columbia University, were "victims" of voluntary experiments conducted in high-altitude flying when both contracted tuberculosis as a result of the reopening of long-healed tuberculosis scars, it has been revealed nationally.

A report of the experiment was made to the Aero Medical Association of the United States at St. Louis September 6 by Dr. Johnson, who has recovered from the disease, and by Dr. Alvan Barach, director of the experiments for Columbia.

The Columbia men were studying high-altitude flying in conjunction with "bends," a distressing affliction of fliers, when they discovered that the 42,000-foot altitude would reopen old tuberculosis scars. Both Dr. Johnson and Dr. Rule had voluntarily subjected themselves to tests in steel decompression chambers for half-hour periods.

The result of the discovery probably will be the exclusion from flying schools of all persons with spots on their lungs, even if long healed, the doctors suggested.

On September 1, 1944, Mr. James E. Bryan assumed his duties as Public Relations Officer and Editor of the *Journal* of the Medical Society of the County of New York. The Publication Committee and the editorial staff extend to him a cordial and hearty welcome.

Mr. Bryan begins his new work in New York County after twelve years as Executive Secretary of the Westchester County Medical Society and Managing Editor of its *Bulletin*.

Mr. Bryan has been a member of the board of directors of the Westchester Tuberculosis and Health Association for the past ten years, serving as its president in 1940 and 1941. During the war

period he has served as deputy director of Emergency Medical Service in the Westchester Office of Civilian Protection and as secretary of the Medical Care Subcommittee of the Disaster Relief Committee of the Westchester Chapter, American Red Cross. He is a member of the Health Advisory Council of the Westchester Cancer Committee, and the Westchester Nursing Council for War Services. He comes from a medical family, his father being a physician still in active practice in Asbury Park, New Jersey, and he has the imagination, the creative spark, to render invaluable service to the county society.

The New York Diabetes Association, Inc. held an open meeting on September 28 at 8:30 p.m. at Blumenthal Auditorium, Mt. Sinai Hospital, in New York City.

Herman O. Mosenthal, M.D., Chairman, Committee on Research, presided over the meeting. The papers which were read were "Alloxan Diabetes," by Dr. Martin G. Goldner, assistant professor of medicine, University of Chicago, and "Histology of the Normal and Diseased Pancreas," by Dr. George Gomori, assistant professor of medicine, University of Chicago. Dr. Paul Klemperer, pathologist, Mt. Sinai Hospital, discussed the papers.

The meeting was open to all physicians and medical students.

#### Sr. Lawrence County

Sixty persons attended a luncheon and meeting of the county society at the Potsdam Club on August 16. Dr. Orren D. Chapman, of Syracuse University, addressed the group on the methods which may be used in treating soldiers who will return from the tropics with various tropical diseases.\*

#### Steuben County

A joint meeting of the county society and the county bar association was held September 14 at the Hotel Sherwood in Hornell.

After luncheon at 1:00 p.m. a scientific program was presented at 2:00 p.m. Dr. Philip Levine, director of the Biological Division, Blood Testing Laboratory, Ortho Research Foundation, Linden, New Jersey, spoke on "The Medicolegal Consideration of Blood Groups in Paternity Cases," and W. Earle Costello, of Corning, spoke on "The Legal Aspects of Paternity Cases."

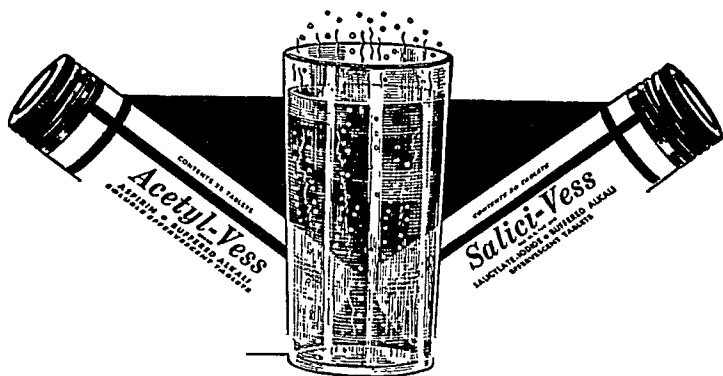
A business session followed immediately after the scientific session.

#### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
S. T. Armstrong	85	St. Louis	August 31	Katonah
Frederick C. Ballard	68	Buffalo	August 16	Rushford
George B. Case	60	Syracuse	August 17	Syracuse
Thomas H. Cherry	64	P. & S., N.Y.	August 30	Manhattan
Frederick H. Dillingham	88	P. & S., N.Y.	August 30	Manhattan
Frank G. Engelhardt	73	Syracuse	August 18	Syracuse
Joseph E. Funk	33	Tufts	July 28	Laurelton
Charles H. Herrick	80	Albany	August 30	Unadilla
Eldorus D. Lyon	89	N.Y. Univ.	August 11	Hastings-on-Hudson
Ralph L. McGeoch	76	N.Y. Hom.	September —	Goshen
Cornelius J. Noonan	67	P. & S., N.Y.	September 10	Brooklyn
Robert Rosenberg	55	Fordham	June 13	Brooklyn
John E. Virden	81	Bellevue	August 30	Bronx

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\*Goodman, L. and Gilman, A., Analgesics and Antipyretics, The Pharmacological Basis of Therapeutics, New York, The Macmillan Co., 1941, pp. 226-227.

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# Hospital News

## Nurse Recruitment Quotas for 1944 Set

STATE quotas for Army and Navy nurse corps recruitment for the period ending December 31, 1944, released to State Committees for the Procurement and Assignment of Nurses, have been set generally at a figure equivalent to one-third of the number of student nurses graduating this year in each state, the War Manpower Commission announced on August 10.

The state quotas, WMC said, are to meet the increasing demands of the armed services for nursing services and to furnish replacements on the battlefields and in military and naval hospitals in this country. Approximately 6,000 of the new nurses will be recruited for the Army and 3,000 for the Navy.

According to the nursing section of the Procurement and Assignment Service of WMC, quotas are less than one-third of anticipated graduates in states having a nurse shortage. States which failed to meet quotas for the first six months of this year have

been assigned higher quotas for the period ending December 31.

Thirty-seven states met their quotas for the first six months, bringing the total number of graduate nurses accepted for military service for this period to 7,869. The goal was 8,000.

The actual recruiting of nurses for the Army and Navy is conducted by American Red Cross recruitment committees. All of the nurses recruited by these committees will come from the pool of graduate nurses declared available for military service by state and local procurement and assignment committees that classify all graduate nurses either as available for military service or essential in their present positions.

The large majority of nurses assigned to military service during the next six months will be new and recent graduates, many of whom have completed their nursing studies under the U.S. Cadet Nurse Corps program, WMC said.

## Hospital Librarians to Have Organization

LIBRARIANS in hospitals, who up to now have had no special provisions made for their advancement and organization, now have their choice of two such arrangements.

The Special Libraries Association, at its recent conference in Philadelphia, June 19 to 21, formed a group for hospital and nursing school librarians. Ruth Tews, head of the hospital library service of the St. Paul Public Library, was appointed chairman.

All persons who are interested in receiving the news letter from this group are invited to write Miss Tews.

The group is designed to "give all librarians working in hospitals opportunity for active participation in the national development of their work, in determining standards, in considering publications and in extending their work." Librarians from Chicago,

New York, Minneapolis, and St. Paul petitioned for this action.

At the same time a petition was circulating among hospital librarians for the formation of a hospital libraries division in the American Library Association. At present, these librarians have only a round table in the A.L.A. A division has almost complete autonomy, elects its own board and officers, has representation on the A.L.A. council and receives for its own uses 20 per cent of the A.L.A. dues of its members.

If a division is formed it would have sections for hospital, institutional, medical, and nursing school libraries and for others if needed. The petition was circulated by Mrs. Glyde B. Nielsen, secretary-treasurer, A.L.A. Hospital Libraries Round Table. Mrs. Nielsen is with the Minneapolis Public Library.—*The Modern Hospital*, August, 1944

## Hospital Projects Recommended in Twenty States

HOSPITAL projects in twenty states to provide 16,000 additional beds, to cost \$70,000,000, have been recommended to the Federal Board of Hospitalization by the Veterans Administration.

The new beds would include 5,000 for neuropsychiatric patients, 3,000 for tuberculosis victims, and 8,000 for general medical and surgical cases. The announced program is the first in the \$500,000,000

hospital setup authorized in the "G.I. Bill of Rights" law. The new hospital facilities will be located in New Hampshire, Rhode Island, Delaware, Virginia, Florida, Michigan, Kentucky, Louisiana, Mississippi or Alabama, eastern Kansas or northern Missouri, eastern Montana or western North Dakota, Colorado, California, Texas, Washington, New York, Georgia, Ohio, Pennsylvania, and Illinois.—*J.A.M.A.*, Aug. 19, 1944

## Nurses Lack Opportunity to Learn Clinical Aspects of Nursing

THAT the 100-daily-average-patient criterion does not necessarily provide students adequate opportunities for learning clinical aspects of nursing is brought out in the article, *Clinical Facilities*, in the August, 1944 *American Journal of Nursing*.

The article is based on a study of clinical facilities in the home-hospital of 1,047 schools of nursing by

the Department of Studies of the National League of Nursing Education.

The article points out that, although schools of nursing in 1943 were connected with larger hospitals than they were in 1939, 25 per cent of the schools were connected with hospitals having a

[Continued on page 2164]

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[Continued from page 2162]

daily average of only 68 patients or fewer, while the home hospitals of forty-eight of the schools had a daily patient census of less than 30.

The median number and the range of patients on the four basic services in the hospitals reporting are as follows:

Clinical Service	Patients on Service		
	Median	Low	High
Pediatric	11	1	320
Medical	29	3	1,025
Obstetric (mothers and infants)	38	2	448
Surgical	47	4	877

## Improvements

Purchase of an iron lung for Ideal Hospital in Endicott by the Broome County Chapter of the National Foundation for Infantile Paralysis was announced on August 1 by Thomas H. Fogarty, president of the Broome Chapter.

A new iron lung has also arrived in Ithaca for use at the Ithaca Reconstruction Home.

It was presented to the people of Tompkins County by the Ithaca Aerie 1253, Fraternal Order of Eagles; Ithaca Lodge 636, BPO Elks; Ithaca Chapter 666, Loyal Order of Moose, and Finger Lakes Post 961, Veterans of Foreign Wars.\*

Nearing completion is the new Deaconess Hospital, Buffalo, addition, constructed under a \$486,000 Lanham Act grant. The work will probably be finished about November 1, according to Supt. Henry T. Brandt. The addition will increase the capacity of the hospital to 350 beds for adults and 101 for infants.\*

Downtown Hospital in New York City, in order to be completely modernized and streamlined, was temporarily closed, it was announced by A. O. Davidsen, administrative director; it reopened on September 12 with ceremonies including a parade.

The institution, formerly the Broad Street Hospital, was opened September 17, 1917, to serve the downtown financial and waterfront districts.\*

Construction of its own sewage disposal plant, to serve the more than 2,000 patients and personnel

which will be housed at the U.S. Veterans Facility in Canandaigua by next year, will be started by the Government this fall.\*

Completed in ten days, at the rate of one a day ten hospital recreation rooms in the Mitchell Field Base area were recently furnished by Nassau women serving as volunteers of the Red Cross Camp and Hospital Committee of Nassau, Mrs. Harry I. Nicholas, chairman, announced.\*

The Waterloo Memorial Hospital has a new operating-table light, which was purchased from a fund started by the Waterloo and Seneca Falls Nurses Association about three years ago and added to by other individuals and organizations in Waterloo until the necessary amount of about \$780 was raised.\*

An insufflation unit used to regulate the amount of oxygen administered to a patient has been presented to the Herkimer Memorial Hospital by the William Hempstead Post of the Veterans of Foreign Wars, Ilion.\*

Uticans recently donated eighteen electric fans to Rhoads General Hospital. A drive to obtain two hundred fans has been in progress for several weeks.\*

## At the Helm

Promotions of six officers among Rhoads General Hospital personnel were announced in Utica on August 9 by Col. A. J. Canning, commanding officer.

Promoted from captain to major were:

Carl M. Guymor, Medical Administrative Corps, post adjutant. Major Guymor has completed twenty-eight years of military service, and has been stationed in Fort Dix and in the Philippines. He came to Rhoads Hospital from Halloran General Hospital, March 25, 1943.

Louis E. Marshall, Medical Corps, Brooklyn, chief of laboratory service at the hospital since October 9, 1943. Major Marshall was graduated from the New York University College of Medicine in 1936.

Carlos M. Julia, MC, Hato-Rey, Puerto Rico, attached to the surgical service and consultant of penicillin treatment. He was graduated from the

University of Paris School of Medicine in 1935, and has been at Rhoads since April 4, 1943.

Promoted from first lieutenant to captain was:

Edward Kezur, MC, Toledo, Ohio, attached to the neuropsychiatric section. He was wounded in action at Attu, and has received the Purple Heart award. Captain Kezur has been at Rhoads since last February 13.

Promoted from second lieutenant to first lieutenant were:

Herman L. Leyton, Signal Corps, New York City, attached to the laboratory service. Lieutenant Leyton was born in China, was graduated from Long Island University in 1941, and has been at Rhoads since last November 21.

William M. Ganey, MAC, Dunkirk, assistant post medical supply officer. Lieutenant Ganey enlisted in the Army February 25, 1942, and was commissioned July 7, 1943, at Camp Berkeley, Texas.\*

\* Asterisk indicates that item is from a local newspaper.



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[Continued from page 2164]

Thomas T. Murray, superintendent-administrator of White Plains Hospital for four years, has resigned, the resignation to become effective on September 30.

Mr. Murray went to the White Plains institution from Albany Memorial Hospital, where he served as superintendent for fourteen years.

Mr. Murray is a native of Scotland. He came to Canada in 1911 and served overseas with the Canadian Expeditionary Force in World War I.

After the war Mr. Murray became superintendent of a hospital in Saskatoon, Saskatchewan. Later he became director of the General Hospital at Knoxville, Tennessee.

Mr. Murray is a former president of the State Hospital Association.\*

Dr. David W. Park has resigned as superintendent of Potsdam Hospital, Potsdam, New York, to join the staff of the American College of Surgeons.

David M. Dorin, formerly assistant director of Beth Israel Hospital, New York City, has been chosen as executive director of Sydenham Hospital, New York City. Last December the hospital was reorganized on a fully interracial basis, with a board composed of six Negro and six white trustees. The interracial policy is also followed in the medical, nursing, administrative, and other staffs. It is believed to be the first voluntary hospital to inaugurate the interracial idea.

Frances Chappell, former superintendent at North Country Memorial Hospital, Glen Cove, New York, has been named head of Memorial Hospital, Owosso, Michigan.

Dr. George W. Cottis, of Jamestown, past-president of the Medical Society of the State of New York, has been appointed by Governor Dewey to the Board of Visitors for the State Institute for the Study of Malignant Diseases at Buffalo.

Dr. Cottis was one of five named to the board. The other four are Alfred H. Kirchhofer, Buffalo; Dr. Walter L. Machemer, chief of the surgical department of the Buffalo Children's Hospital; Dr. John J. Morton, chief surgeon of Strong Memorial Hospital, Rochester; Dr. James B. Murphy, New York City, a member of Rockefeller Institute; and Dr. Frederick S. Wetherell, surgeon of the Memorial and St. Joseph's Hospitals, Syracuse.\*

Dr. Richard H. Freyberg, assistant professor of internal medicine and in charge of Rackham Arthritis Research at the University of Michigan School of Medicine, Ann Arbor, has been appointed chief of the department of medicine and pediatrics at the Hospital for Special Surgery in New York City, effective September 1. Dr. Freyberg will succeed Dr. Carlisle S. Boyd, who has been appointed to the board of consultants of the hospital.

Judge George M. Penney of Oswego, Oswego County surrogate, was elected president of Oswego Hospital at a meeting of the board of trustees on July 10.

Judge Penney succeeds Miss Anna W. Post, who served during the past year, but who, because of illness, could not continue in office. Mrs. Jermyn J. Downey was elected second vice-president and Chester M. Jermyn, secretary. A first vice-president is to be appointed.\*

Miss Isabelle V. Cameron has assumed her duties as superintendent of the Cohoes Hospital.

Miss Cameron went to Cohoes from New York City, to succeed Miss Margaret Smylie, who has resigned.

A native of Scotland, Miss Cameron trained at Mountinside Hospital, Montclair, New Jersey. She last served as superintendent at Commonwealth Hospital, Pittsfield, Illinois.\*

Andrew W. Patrick, member of the Herkimer town council, has been named district manager for the Blue Cross Hospital Plan, Inc., succeeding J. Kenneth Young.

Mr. Patrick will have charge of hospital-plan offices in Herkimer, Ilion, and Little Falls.

Mr. Young has been transferred to the northern part of the state.\*

Sister St. Edward, mother general of the Grey Nuns of the Sacred Heart, Melrose Park, Pennsylvania, has appointed Sister Mary Carmen superintendent of the A. Barton Hepburn Hospital in Ogdensburg, to succeed Sister Mary Monica, whose six-year term has expired. Sister Monica has been transferred to Champlain Valley Hospital in Plattsburg.\*

Dr. Clement J. Handron, of Troy, was appointed to succeed Dr. Vincent Mazzola, of New York City, on the medical Committee on Grievances of the State Board of Medical Examiners, at a meeting of the State Board of Regents held in New York on July 21.\*

## Newsy Notes

Manhattan's thirty-four voluntary hospitals, members of the Greater New York Hospital Association, nearly tripled their quota in the Fifth War Loan, John F. McCormack, chairman, and Mrs. Donald B. Woodward, cochairman of the Hospital Division, War Finance Committee for New York, have announced.

The quota accepted by the group at the beginning of the drive was \$3,500,000. The final figures show an over-all total of \$9,256,640, or 264 per cent of quota.

[Continued on page 2168]

## EXTERMINATING COSTS

A statistician has computed that it costs the U. S. fifty-five thousand dollars to exterminate one Nazi on the ground, and it is cheaper by \$11,000 to bring down one of Goering's planes.

The cost, continues the expert, required to kill one soldier in this war would have destroyed 66,000 men in the days of Julius Caesar. It cost but 70

bargain days.

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\$3,000 in the

days of his aspirations to rule the world. The American Civil War raised the ante to \$5,050 per fighting man. Multiply that figure by four-plus and you will have the expense for killing a Hun in World War I.

In the twenty-odd years since the last war, the high cost of killing enemies has more than doubled. There is an old saying that "war doesn't pay"—but apparently everybody else does, even the Germans spend about the same amount every time they shoot a Russian, a Briton, or a Yank.

But, the III Reich is getting off cheaper than we are for they are killing less Yanks than the fatalities they are suffering. Which is as we would have it regardless of cost in dollars

## THE END OF DENTAL DECAY?

With some dental experts of an opinion that a real decay preventive has been found—science hopes

Deaf Smith County, Texas, may go down in history as the prophetic harbinger of sound teeth for all mankind. This is one place in the U. S. A. where hundreds of persons don't know what it is to writhe in a dentist's chair, and where there was an average of only one bad tooth per child among 810 school children examined. The average in less fortunate localities would run from 5 to ten

An explanation of this phenomena may be in the discovery that there are 2.5 parts of fluorine to 1,000,000 parts of water in that locality—five or six times as much as found in other communities. In laboratories it has been found that fluorine acts to prevent tooth decay—either by retarding the formation of certain harmful acids in the mouth or by making teeth much less soluble in acids that exist, or through both actions.

The ten-year tests on the populations of Newburgh and Kingston, N. Y., and Brantford, Ontario, may eventually be instrumental in putting an end to at least 90 per cent of all tooth decay. Here 96,000 controls will prove whether fluorine added

against disease, contends that while added fluorine it may still il-calculated visit to the dentist three times a year, but all he each tooth with a

hasn't offered 100 per cent anti-decay defense, but Dr. Bibby expects greater results from the technique. Some may insist that a drink of prevention is better than three visits to the dentist—if it becomes as simple as that, however, the good old toothbrush will still be an asset for a beautiful smile, even when the last drill and last forceps have rusted.

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[Continued from page 2168]

gestion for a pipette washer to be used in the laboratory will effect an annual saving of about \$330 to the hospital.

The suggestion program at Finney General Hospital is part of the national drive for suggestions that will speed production, save time and money, and speed up efforts to win the war. \*

. . .

The Half Moon Hotel at Coney Island was commissioned as a Naval Convalescent Hospital on August 30 and Comdr. Earle P. Huff was designated its Medical Officer in Command, at ceremonies on the sundeck of the fifteen-story, 303-room building that faces the ocean at the entrance to New York Harbor.

Rear Admiral Edward U. Reed, Medical Officer of the Third Naval District, read the orders commissioning the hospital. \*

. . .

Over 2,000 additional persons enrolled in the Chautauqua Region Blue Cross program during the first six months of 1944, according to Robert E. Johnson, executive director. This brings the total

in Chautauqua County to approximately 18,500, Mr. Johnson said.

. . .

A campaign to raise \$350,000 for Sydenham Hospital, in New York City, began on July 26, with a luncheon at the Hotel Roosevelt. The hospital was the first voluntary hospital in the country to include both Negroes and whites among its doctors, nurses, patients, and trustees.

Eduard C. Lindeman, professor of social philosophy at the New York School of Social Work, Columbia University, was the principal speaker. "Disease knows no color lines," he said. "Bacteria don't discriminate."

"There it stands," he said of the hospital, "in the heart of the densest Negro population in the world, and there is no intimation of racial friction. It is one of the most meaningful experiments in racial behavior I have seen on the continent."

. . .

Carl M. Metzger, executive director of the Hospital Service Corporation of Western New York, has just issued a report showing that membership in the local Blue Cross Hospital Plan jumped to an all-time high of 370,000 during the first six months of this year. \*

#### ACADEMY OF MEDICINE ANNOUNCES NEW SUITER LECTURESHIP

The New York Academy of Medicine has announced the establishment of a new annual lectureship in accordance with the provisions of the will of the late Dr. A. Walter Suiter. The lectures will be held under the auspices of the Committee on Public Health Relations of the Academy.

The first of the series will be delivered on Thursday, November 2, at 8:30 p.m., by Dr. Stuart Mudd, professor of bacteriology at the University of Pennsylvania. The subject of the lecture will be "Airborne Infection—The Rationale and Means of Disinfection of Air."

This lecture is open to the general public.

#### AMERICAN SOCIETY OF ANESTHETISTS TO MEET IN OCTOBER

The next meeting of the American Society of Anesthetists will be held at the New York Academy of Medicine, Room 550, October 12, at 8:00 p.m.

The business session at 8:00 p.m. will be followed by the scientific session at 8:15 p.m. The first lecture will be "Acute Pulmonary Edema During Sympathectomy," a case report by Dr. Morris Bien, of Mount Sinai Hospital. This will be followed by "Respiratory Physiology," a lecture by Dr. Carl F. Schmidt, professor of pharmacology, University of Pennsylvania School of Medicine. These lectures will be discussed by Drs. Herbert Maier, New York, and J. Burns Amberson, New York.

#### HEALTH SERVICE CONDUCTS POSTGRADUATE COURSE IN VENEREAL DISEASE

The U.S. Public Health Service's eighth postgraduate course in venereal disease control will be conducted at the Public Health Service Medical Center, Hot Springs, Arkansas, October 19 to November 8. Dr. J. R. Heller, Jr., chief of the Venereal Disease Division of the Public Health Service, Federal Security Agency, announced on September 15. The course will be given to health officers and to private physicians cooperating with State and local health department venereal disease control programs. Lectures and demonstrations will be given by outstanding specialists.

Physicians who will conduct the course are Dr. Udo J. Wile, Ann Arbor, Michigan; Dr. Ruth Boring Thomas, New York City; Dr. Austin V. Deibert, Fort Douglas, Utah; Dr. Richard C. Arnold, Staten Island, New York; Dr. Eugene A. Gillis, New Orleans, Louisiana; and Dr. Robert B. Greenblatt, Hot Springs, Arkansas.

Applications for admittance to the course should be submitted promptly through State health officers, to the Medical Officer in Charge, U.S. Public Health Service Medical Center, Hot Springs National Park, Arkansas.

#### GASTROENTEROLOGIC CONFERENCES AT BELLEVUE

The gastroenterologic conferences at Bellevue Hospital which began Monday, October 2, will continue every Monday throughout the ensuing year.

The conferences are held at 3:00 p.m. in the G 6

amphitheater (F & G Building). As in previous years, these conferences consist mainly of a presentation of the clinical, pathologic, and radiologic findings of current abdominal cases that have come to operation or autopsy.

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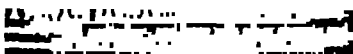
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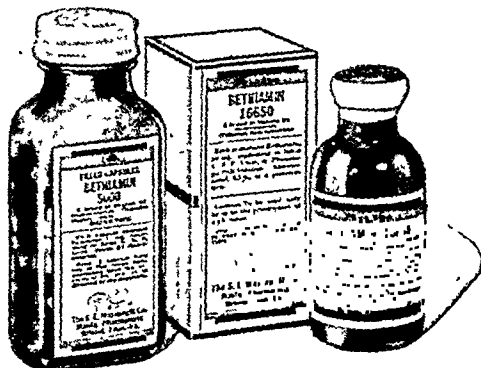
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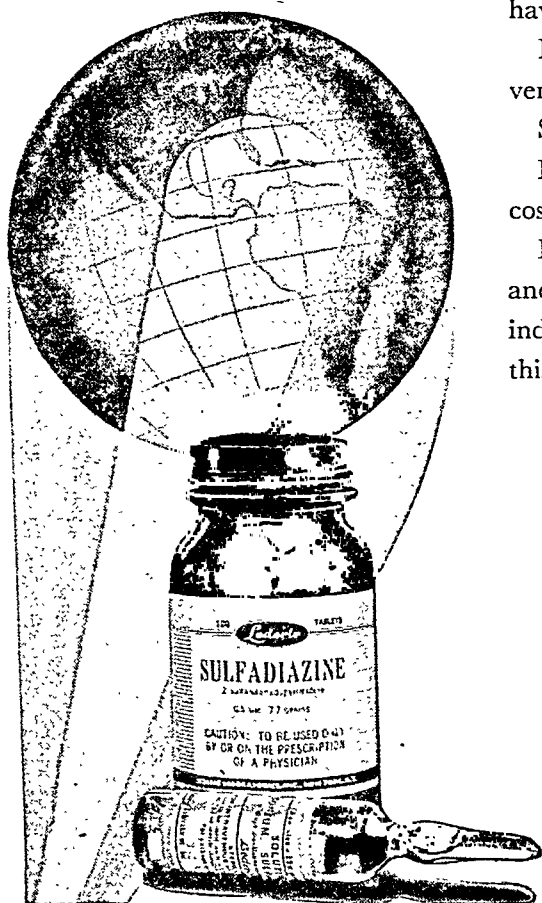
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HALL, W. W.: Am. Drug Mfgs. Assoc., Annual Convention, Scientific Sec., Hot Springs, Va., May 1, 1944.  
Annual Reports, U. S. Pub. Health Service, 1942-43, p. 122.

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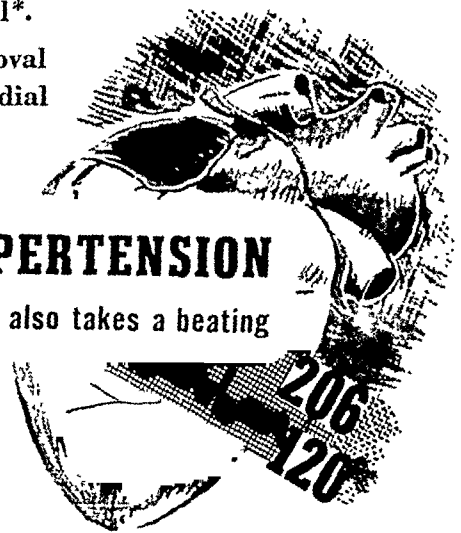
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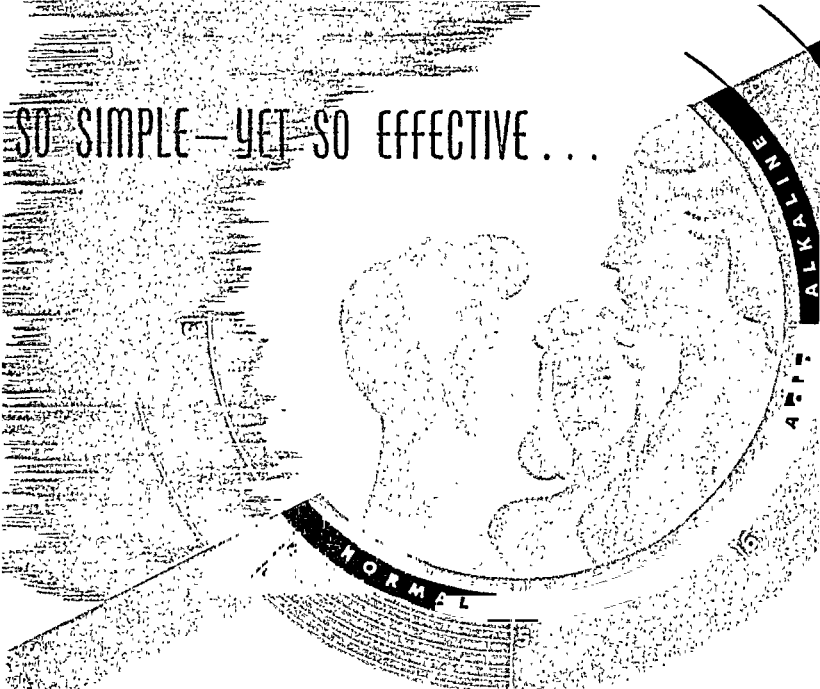
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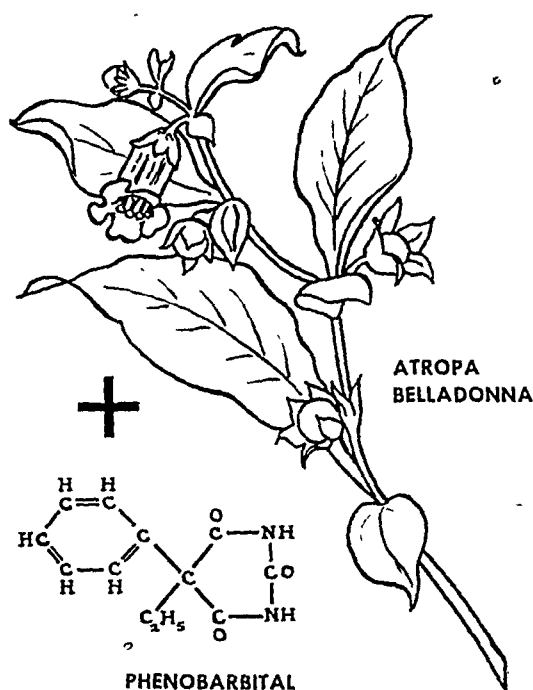
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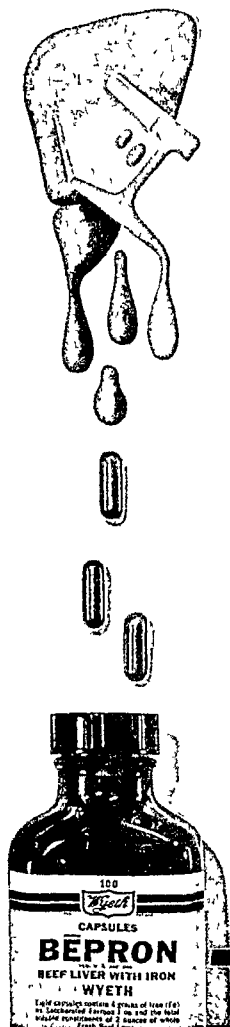
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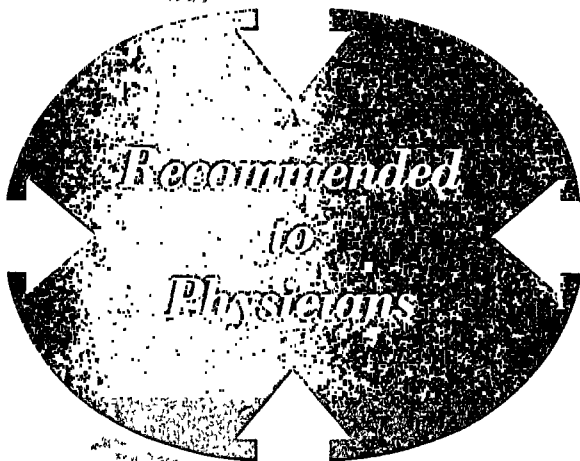
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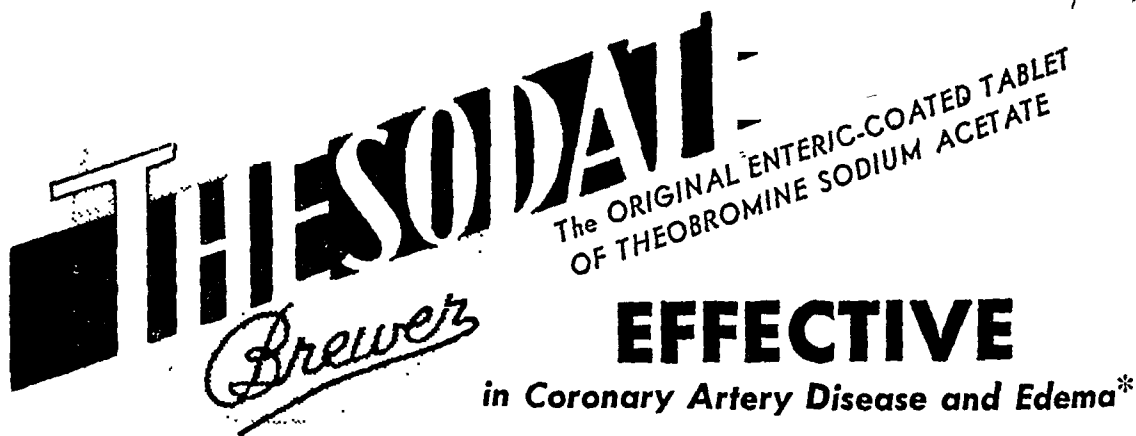
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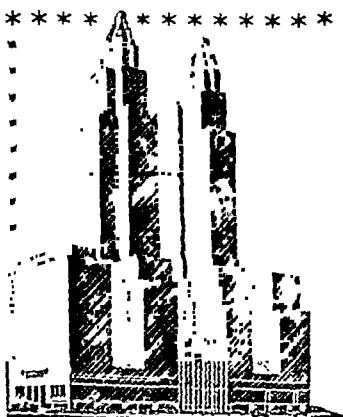
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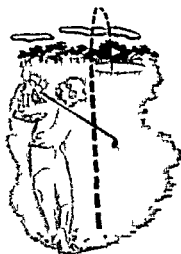
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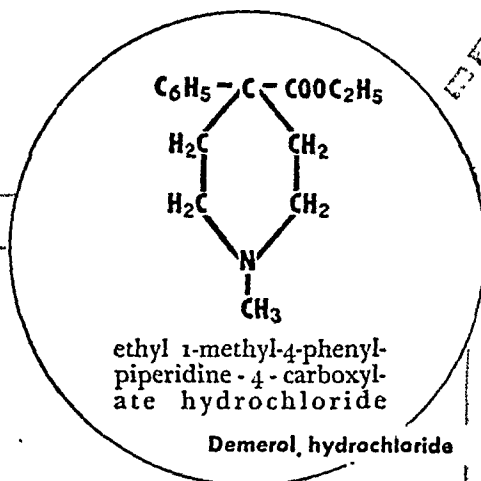


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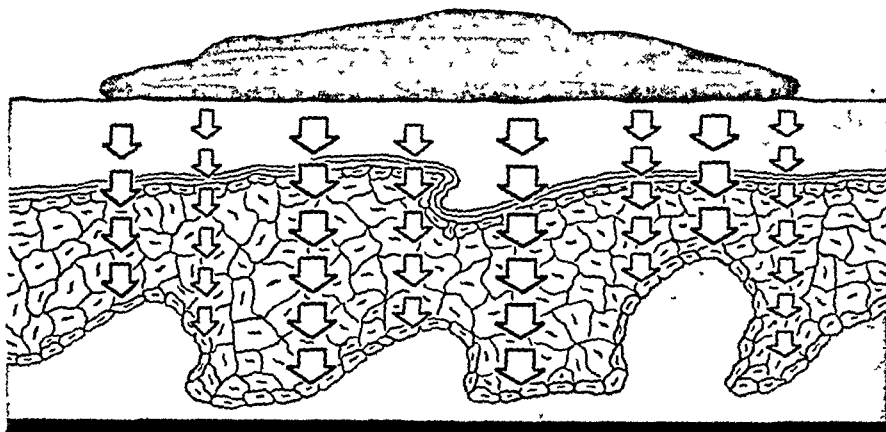
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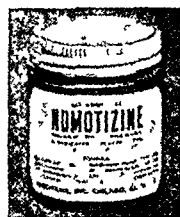
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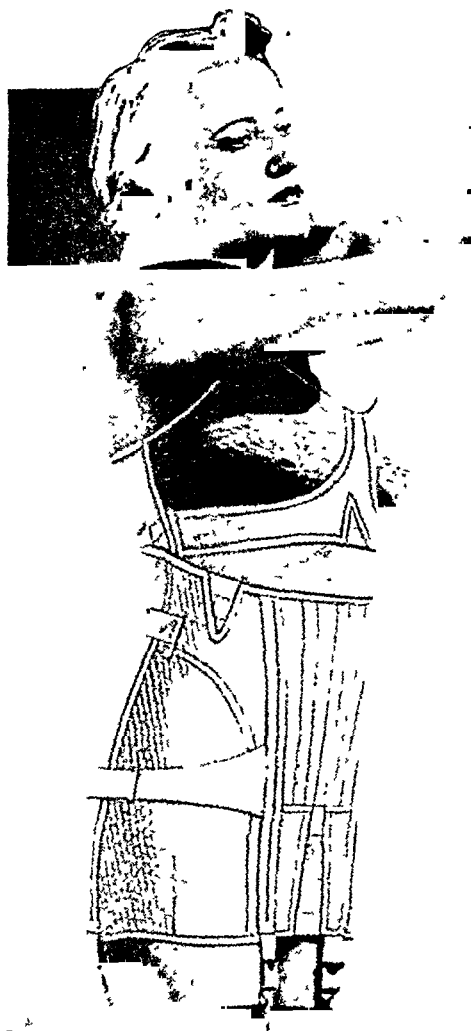


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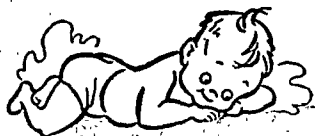
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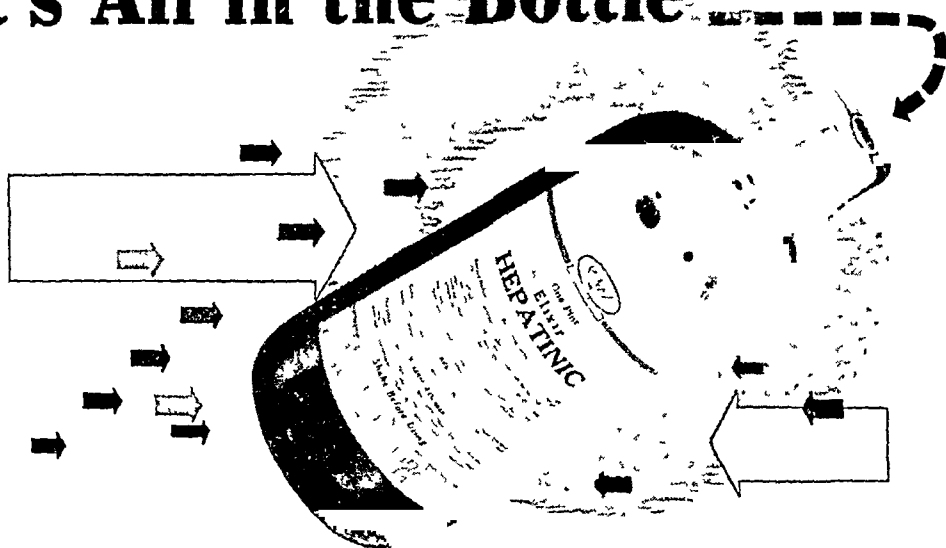
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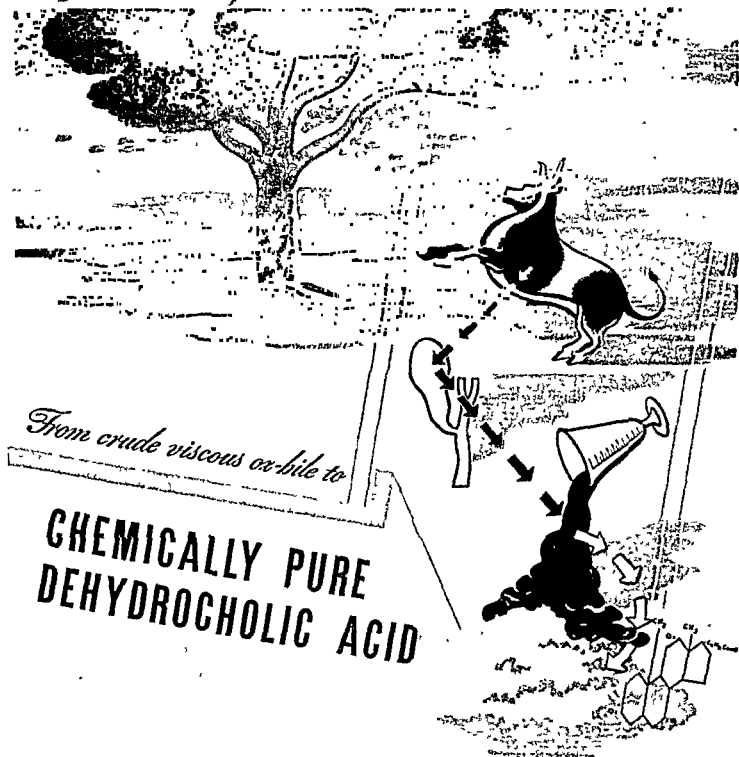
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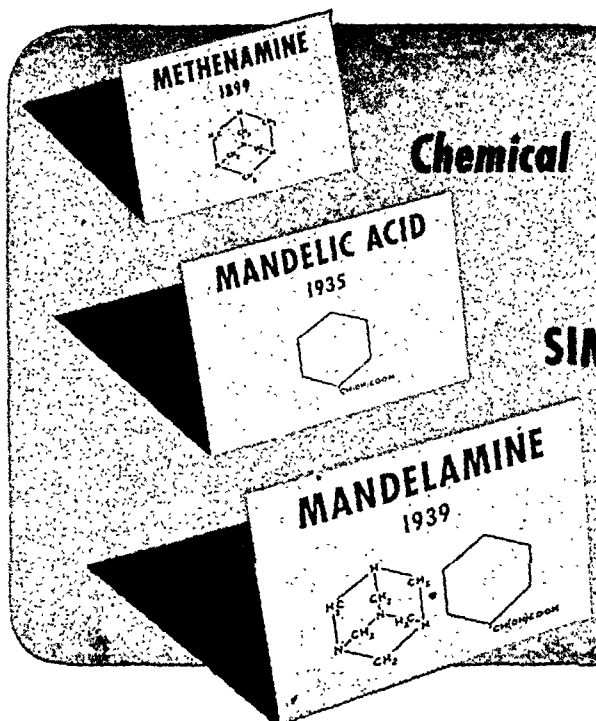
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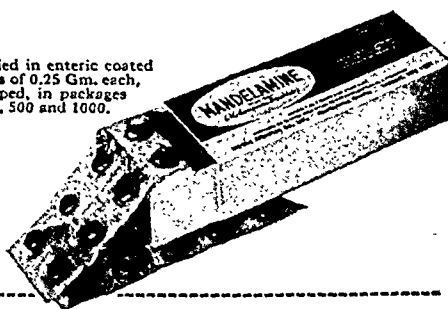
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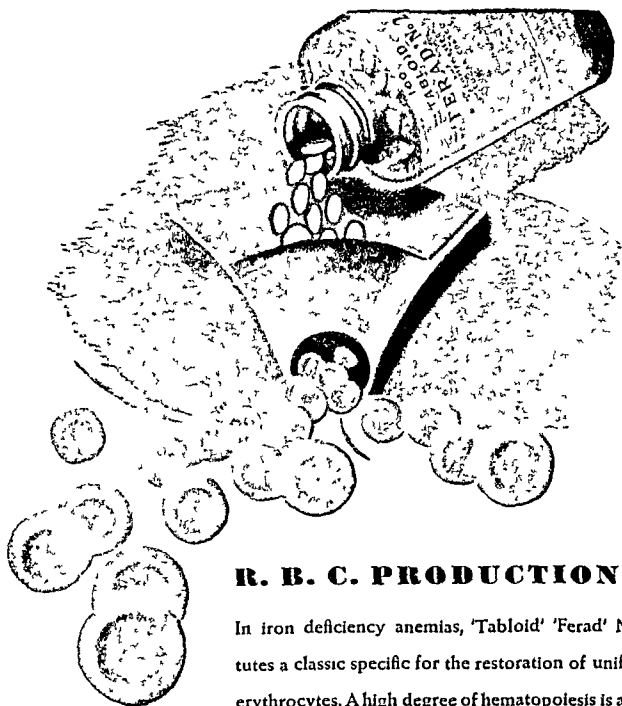
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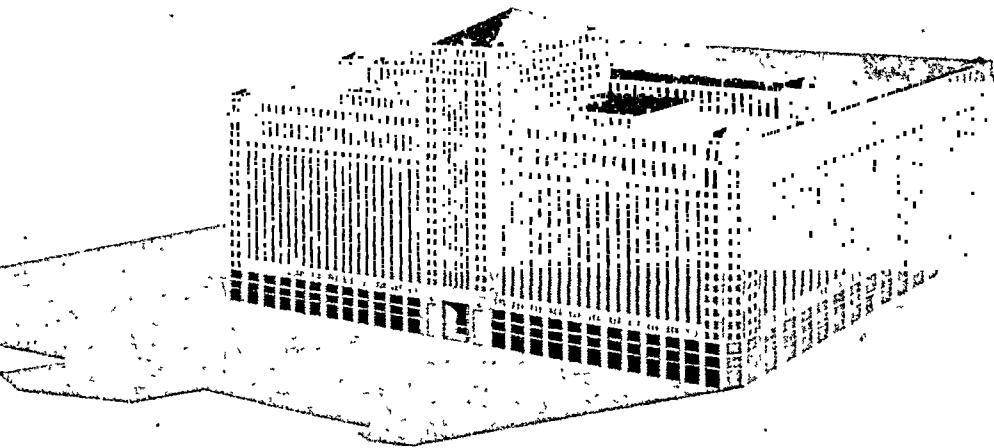
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VOLUME 44

OCTOBER 15, 1944

NUMBER 20

## *Editorial*

### Edward Charles Podvin, M.D.

Dr. Edward Charles Podvin, Assistant Secretary of the Medical Society of the State of New York since 1936, died at his home at 2564 Marion Avenue, the Bronx, September 27, 1944. He was 68 years old.

Dr. Podvin, who had practiced medicine in the Bronx since 1903, was a native of Hudson Falls, New York, and was a graduate of Manhattan College and Albany Medical College. He was chairman of the Bronx Tuberculosis and Health Committee, former President of the Catholic Physicians'

Guild of the Bronx, and consulting gastroenterologist at Fordham Hospital.

His tall bearded figure, heavy gold watch chain, spectacles, and genial smile were familiar to the physicians of the State at annual meetings as he stood on the rostrum at his appointed task of calling the roll of delegates and presiding during the brief absences of the Secretary.

His presence will be missed at both the annual meetings and the sessions of the Council. *Ave atque vale.*

### Plain Talk; III

There is one good point about being in agreement about something—you can go about your business expeditiously without wasting a lot of time squabbling.

Take voluntary prepaid medical care, for instance. There used to be some doubt and uncertainty about it; would it work? Did the doctors think it a good thing? How did the people feel about it? Would

the medical profession support it? That was long ago.

Now the medical profession is squarely behind it, the public wants it, nobody opposes it who is sufficiently informed on the subject to know what it is all about. Take one aspect of it, for example. How can any plan to insure people against illness work unless the doctors are behind it? The whole

principle of insurance depends upon *enough* lives, or houses, or automobiles of just plain people who pay premiums to meet the *cost* of the thing they *insure against*; in this case, *illness*. Next there must be enough doctors to treat the people, good doctors, too, or the people won't buy the insurance. Why should they put up with other than the *best* medical care? When they buy something they want the best that can be had. That is why the doctors themselves, through their Medical Society of the State of New York, are sponsoring voluntary prepaid medical expense indemnity insurance. That is why the Medical Society is setting up, right now, a Bureau of Medical Care Insurance with a full-time director so that the people can have the kind of insurance they want, backed by the doctors themselves. Such insurance is *safe* insurance.

Many of you remember the watch that made the dollar famous. It was good because it had responsible people and good workmanship and materials in it. Voluntary medical care insurance backed by responsible doctors is good for the same reason. Such insurance provides medical care of a

quality that the doctors, through their State Medical Society, propose to furnish to those who want to buy insurance against illness.

It is not to be anticipated that you can start with a perfected plan. You can start with an actuarially *sound* plan, and you can set your upper limits of acceptance in a manner or at a level to include 94 per cent or thereabouts of all the people in the country. Then, after you have enough subscribers to your plan you can modify the details as may be necessary, and as accumulating *experience* seems to direct. But you certainly cannot go until you start.

Even though the people want prepaid medical care insurance it will take some time to cover 94 per cent, say, of the people of the country, or even of this State. Policies have to be written and marketed. So it's up to us to take the driver's seat and deliver the goods, isn't it? What is to stop us? Nothing that we can think of at the moment. Doctors have never yet been stopped from doing anything which they thought was for the public interest, and for the betterment of the public health, come hell or high water.

## Remarks of the President

In his addresses to the various District Branches of the Society, President Baucus covered many of the activities of the organization in its relation to the public and to the profession. For the benefit of those who could not attend the meetings we reproduce here, in part, the greater portion of his remarks, supplementing those which were published with editorial comment in previous issues of the JOURNAL.

"The Medical Society of the State of New York has one of the most comprehensive and best-conducted postgraduate teaching programs in this country. It is available to the entire profession as a series of continuous courses, and keeps our practitioners in touch with the newest worth-while developments in medical care. In these efforts we have the invaluable aid and wholehearted support of the New York State Department of Health. It is really a joint teaching program for the eventual good of the people of this State. A major portion of the activity of the American Medical Association is devoted to the education of the profession. We should loyally support this our parent organization,

appreciating its part in sustaining modern medical practice. Hopefully we look forward to the time when the public becomes fully cognizant of the truth, namely, that the greatest resources of organized medicine are used in the promotion of public well-being.

"Our function in the American scene is, first and last, to prevent illness, cure disease, comfort, and prolong life. This is our profession. We should like to think of it alone. But there are constantly those who would lower medical standards for their own selfish purposes. There are those who would ever change our well-planned order of advance to fit it into economic schemes born of an impractical philosophy. Experience costs time and it is worth at least that much.

"Primitive medicine sometimes demanded of the physician that he not only heal the sick but that he cast a spell upon the patient's enemies. Modern medical care recognizes the outside hazards to man's comfort and health, too—the doctor thinks of the many needs and desires of the human and his family, and in general studies and appraises the conditions which may make for departure from good health. He not only wants to cure the disease, but he wants to know how it came about, and thus perhaps how it may be prevented. In this respect

thinking is objective to the common welfare, but when we think of the patient, sick or apparently ill, we think of him and we care for him as an individual. His mind is personal and so is his body. Can an individual be created, born an individual, dies an individual, goes to his Maker an individual. Can any system of medical care ignore this principle, old as the creation? A true analysis of the patient's thoughts, symptoms, and signs defies any robot system of investigation. The sick person is in trouble, he wants the physician acting for his benefit to be ever so specially interested in him—so to speak, in his corner. The patient is the employer, respected and free. Modern economics should make it possible for the poorest sick man to be the employer of the physician. That is not an unsolved problem of society—it can be solved simply and effectively to the greatest good and with the complement of the best-paying investment on this earth.

"Under the care of our present system of modern medicine the average age of life in the United States has increased to the greatest known for all time. In 1880 the average length of life was 36. In 1920 it was 53. From 1920 to 1944 it progressively increased to the present age of 62. The figures of 1920 to 1944 are especially interesting. Have the

economists of the country done as well with the financial condition of the patient during that period? The answer is obvious."

Medicine is constantly under fire for its alleged shortcomings. Admittedly there is room for improvement. A point which lay critics overlook in their zeal is that nobody is more critical of medicine than the physicians themselves. It is this fact which has advanced scientific medicine so fast that the political and economic structure of the country seems still to be riding around in a horse and buggy trying to keep up.

Medicine will continue its efforts to improve the public health and to prolong the life of man so that he will be able, with better health and more years to live, to criticize medicine and its works over a longer period of time, and will be freer from the ills which now divert attention, and which, we hope, he will in the future devote to better and more constructive criticism of medicine.

## Postwar Training for Medical Officers

Under the title "Continuous Medical Education"<sup>1</sup> we referred previously to the problem of the provision for continuous medical training. We set forth in detail the views of Selective Service and the War Relocation Authority on the question of the premedical and the medical student.

In the issue of August 1, 1944, under the title "Continuous Medical Education, II,"<sup>2</sup> we referred again to the subject about which nothing has yet been done except that the Miller bill (*H.R. 5128*), modifying and amending Section 5 of the Selective Training and Service Act of 1940, is under consideration.

If grave concern exists as to the continuous flow of premedical and medical students, the problem of postwar training for medical officers, though not so immediately pressing, is no less weighty.

The Council on Medical Education and Hospitals of the A.M.A. has taken cognizance of this need of postwar training for medical officers, and in the August 19 issue of

the *J.A.M.A.* published a study of the future educational objectives of medical officers based on questionnaires sent to officers in the armed services.

Editorial comment of interest to all physicians appeared in the *J.A.M.A.* for September 23, 1944, and which we reproduce in part:

"Probably 10,000 medical officers will want house-officer training of six months or more. Since demobilization will probably extend over some time, the number of additional places required will probably approximate 5,000 during the first year. Apparently most expansion will be required in otolaryngology, surgery, obstetrics and gynecology, and ophthalmology, which may need to double their facilities. Expansions of 50 to 70 per cent seem to be indicated in urology, internal medicine, orthopaedic surgery, and pediatrics.

"Somewhat fewer officers are likely to seek shorter courses; about 9,000 officers will seek full-time training of one to six months' duration. In 1943-1944 there were nearly 27,000 physicians enrolled in such courses. However, over 90 per cent of these were in short courses of about a month. Apparently more than 90 per cent of those desiring review or refresher courses will seek training in somewhat longer courses of two to six months' duration. Many more courses of that duration will be required.

"In the light of the figures given, all institutions

<sup>1</sup> New York State J. Med., Vol. 44, No. 14, July 15, 1944, p. 1537.

<sup>2</sup> New York State J. Med., Vol. 44, No. 15, Aug. 1, 1944, p. 1647.



which can contribute to meeting the need are obligated to review their resources and prepare estimates of the additional facilities they can provide, to facilitate the achievement of the program outlined (page 257).

"The communication from Col. Perrin H. Long, published on page 239 of this issue, further underscores the deep concern of medical officers with regard to their further training after the war and indicates that the work being carried out by the Committee on Postwar Medical Service meets a real demand. The suggestions of Colonel Long are similar to the program already being developed. With continuing cooperation of the Committee on Postwar Medical Service, the Council on Medical Education and Hospitals, the Surgeons General of the armed forces, medical schools, American boards in the medical specialties, and others primarily concerned, there is every reason to expect that the needs will be met. Information

now being collected from all educational institutions will be made available in the near future. In the meantime, medical officers can be assured that every effort is being made, and with success, 'to cut through to the goal, because then, with the facts before them . . . (medical officers) . . . will be able to plan their existence in the postwar world.'"

It is interesting to note the apparent tendency of the medical officers to choose the longer periods of training. It is to be hoped that such county societies and other associations which have been foresighted enough to provide them will make available such funds as may be necessary to assist in this program through loans for this purpose. Undoubtedly they will be needed.

## Sulfonamide Renal Pathology

As the limitations and indications of sulfa therapy become more clearly defined, a distinct trend is discernible toward the extension of its usage. This trend is most evident in the realm of prophylaxis against infections which are inherently serious or which are likely to assume an epidemic character.<sup>1,2,3</sup> This relatively new extension of sulfa therapy gives great promise of materially reducing the incidence of diseases in which the causative factor is amenable to such therapy. At the same time this mass chemoprophylaxis entails certain perils which are worthy of repeated emphasis despite an ample literature which warns of the toxic reactions of sulfa drugs.

It is fully recognized that the kidney may suffer injury from sulfa compounds. Such renal pathology may assume a mechanical nature because of masses of crystals accumulating in the renal parenchyma, pelvis, or the ureters, sometimes to the point of obstruction. It is not so well known, however, that these same drugs, particularly sulfadiazine, may produce toxic intrarenal lesions which are quite distinct from the mechanical damage caused by aggregations of crystals.<sup>4</sup> These toxic lesions may assume the form of tubular degeneration or necrosis, and

glomerular changes. To further complicate the picture, toxic renal damage may be associated with obstruction. While the latter is the more common disturbance, it is less serious because the obstructive masses may be removable. Toxic renal effects, however, once initiated, are more ominous and require prompt recognition, for the only effective measure is the immediate cessation of administration of the drug.

The appearance of sulfa crystals in the urine calls for the administration of alkali until the urine is strongly alkaline. A superior procedure is the routine administration of sufficient alkali with the sulfa compound to render the urine definitely alkaline. If hematuria ensues, especially if there is no crystalluria, toxic renal changes should be suspected and the drug discontinued. By observing such precautions and avoiding toxic effects, a promising and effective therapeutic field can be safely developed, devoid of the drawbacks inherently associated with this procedure.

1. Siegel, M.: *Am. J. Dis. Child.* 68: 23 (July) 1944.
2. Holbrook, P.: *J.A.M.A.* 126: 84 (Sept.) 1944.
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# EXPERIENCES WITH THE USE OF DESICCATED THYROID

## Methods of Detecting Self-Induced Hyperthyroidism, with a Report of a Case in Which Auricular Fibrillation Occurred

LEWIS M. HURXTHAL, M D, Boston, Massachusetts

SINCE the subject of "Practical Management of Endocrine Disorders," as listed on the program, is too wide in scope to be discussed in the allotted time, I shall limit my remarks to certain thyroid problems which rarely receive attention and are of clinical significance. These problems are concerned with the use of desiccated thyroid. First, I shall discuss the use of thyroid in myxedema associated with angina pectoris, second, other complications arising from its use, and, last, thyroid addiction and its detection.

### Myxedema Complicated by Angina Pectoris

The treatment of myxedema usually is a simple procedure, but complicated situations, which may lead to fatalities, arise often enough to warrant calling attention to the dangers of treatment with routine doses of thyroid.

Several authors have stressed the importance of caution in treating patients with myxedema and angina pectoris. Christian<sup>1</sup> was one of the first to point this out. In 1939, Bartels<sup>2</sup> reviewed the cases of spontaneous myxedema treated at the Lahey Clinic, and showed that 15 of 59 patients with spontaneous myxedema either had angina of effort before treatment or developed angina or coronary infarction during treatment. In these cases, doses of desiccated thyroid did not exceed 2 grains daily.

The evidence that atherosclerosis is more frequent in long-standing myxedema is fairly convincing. The relationship between hypercholesterolemia and atherosclerosis is interesting. The causal relationship between the two will, I believe, eventually be established, although to date, in spite of animal experimentation, positive proof probably does not exist. I have seen several patients from families in which many, including young adults, were afflicted with angina of effort or coronary infarction and associated hypercholesterolemia, thus giving further support to the theory of relationship between hypercholesterolemia and coronary atherosclerosis.

Heart pain in myxedema may occur at different times and under different circumstances. It may begin with the onset of myxedema and be relieved as treatment of myxedema progresses. On

the other hand, anginal pain may increase on the routine treatment of myxedema consisting of 1 to 2 grains of thyroid daily. When this occurs, smaller doses of  $\frac{1}{10}$  to 1 grain a day may be tolerated. Some patients may have anginal pain on small doses, while others may have it only when larger or maintenance doses are given.

Anginal pain is not commonly present before treatment, but is more likely to occur with treatment. Coronary infarction or prolonged anginal seizures may occur at the onset of treatment, when the dose is increased, or when the patient appears to be well stabilized. Thus, coronary symptoms may appear at any time, and it is sometimes impossible to predict which patient will obtain relief of symptoms and which patient will appear to have an aggravation of symptoms.

In general, the younger the patient and the shorter the duration of the disorder the less chance there is of the development of angina pectoris. A young patient with anginal symptoms before treatment is likely to obtain relief. The presence of hypertension, abnormal electrocardiographic changes, or obvious arteriosclerosis is of little help in predicting the course of events, consequently, treatment should be instituted with caution. Since there is no need of haste, small doses should be given during the first month or so of treatment.

One-fourth grain of thyroid (USP) should be the maximum initial dose. This may appear to be much too conservative, but, as I have said before, there is no advantage in haste. After several weeks the dose may be increased to  $\frac{1}{2}$  grain and so on up to  $1\frac{1}{2}$  to 2 grains a day, which is usually sufficient for complete substitutional treatment. If all signs and symptoms do not disappear in several months, larger doses will not, as a rule, improve the patient's condition.

If anginal symptoms appear at any stage of treatment, the amount of thyroid should be reduced and maintained at that level for one to two months. Then small increases of from  $\frac{1}{8}$  to  $\frac{1}{4}$  grain a day can be attempted. Some patients can detect an increase of  $\frac{1}{10}$  grain of desiccated thyroid a day because of anginal pain. This can be proved by placebo therapy. At the Lahey Clinic we have tried various forms of thyroid without success, particularly those products which are claimed to cause less heart stimulation than ordinary desiccated thyroid. Thus, patients who

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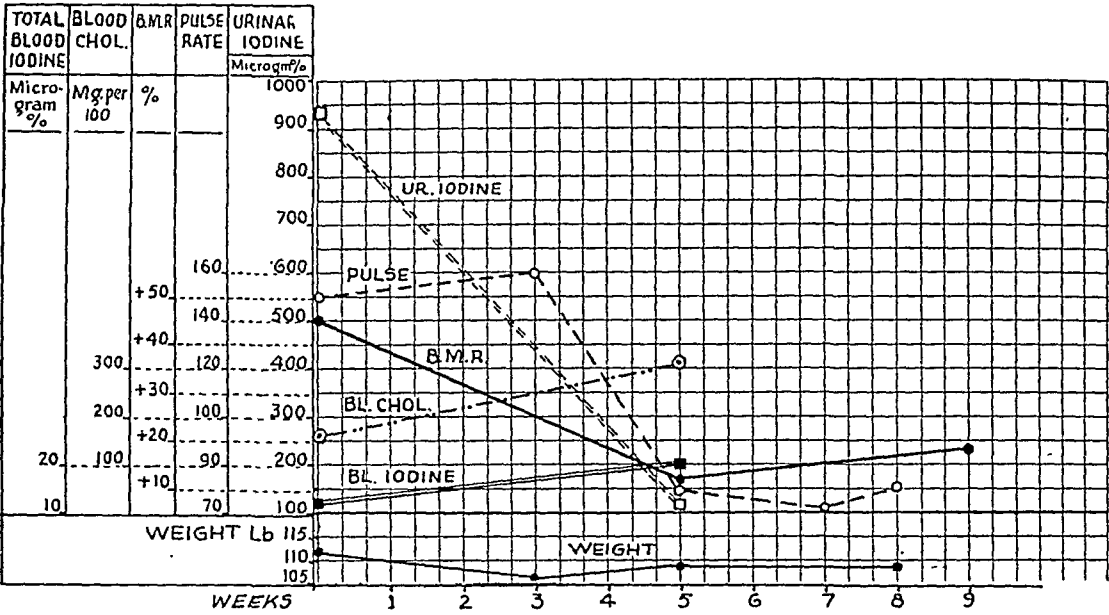


FIG. 1. Chart showing observations on excretion of total urinary iodine during nine weeks following cessation of self-administered desiccated thyroid (U.S.P.), estimated to have been 8 to 12 grains. The persistent high pulse rate was due to auricular fibrillation at the onset; later auricular flutter after digitalization; then return to normal rhythm. The initial drop in weight may have been due to fluid retention because of excessive heart rate.

develop anginal pain on thyroid therapy may be good subjects for comparison of various thyroid products.

As a rule, an increase in anginal symptoms means that the substernal pain or discomfort occurs more easily with emotion or exertion. On the other hand, in some patients it may indicate merely a more acute perception of pain or it may be related to quickened motor or emotional activity from a lessening of the myxedema itself. It would appear, however, that the pain is a manifestation of a greater load on the heart in supplying the demands of increased metabolic activity, not only peripherally but in the heart itself.

Myxedematous changes occur in the heart, and it is reasonable to assume that there is a relative coronary insufficiency which decreases as the myxedema decreases unless actual thrombotic

lesions have occurred. If such exist, the heart may be unable to meet normal metabolic demands without resulting pain. In some patients who are receiving thyroid, prolonged anginal attacks may occur at rest, without definite changes of coronary infarct either electrocardiographically or otherwise. A lowering of the height of the T waves may occur following such attacks, but since thyroid usually is omitted temporarily in these cases the change in T waves may result from this withdrawal. There is little doubt as to actual infarction in other patients with myxedema.

Some years ago I heard of a patient who could tolerate no thyroid by mouth and was given thyroxin intravenously by an enthusiastic physician. Death occurred in an acute anginal attack within twelve hours. This patient probably did not have a coronary infarction but rather an acute anoxemia of the heart resulting in death.

Needless to say, all thyroid should be discontinued for several weeks following prolonged anginal seizures or coronary infarction, then given again in minimum doses, and increased to optimum tolerance (Table 1).

Other Complications

In the treatment of myxedema the physician should bear in mind the possibility that it might be secondary to pituitary tumor with panhypopi-

TABLE 1.—TOLERANCE TO DESICCATED THYROID IN MYXEDEMA AND ANGINA PECTORIS

A. No pain before treatment	
1.	Tolerance 1-2 grains (usual)
2.	Tolerance 1/10-1/4 grain only (unusual)
3.	Tolerance 1-2 grains after initial doses of 1/10-1/4 (unusual but possible)
4.	Unable to tolerate thyroid (rare)
B. Pain before treatment	
1.	Relief with 1-2 grains (avoid but may occur)
2.	Relief with 1-2 grains after initial doses of 1/10-1/4 (advised and often possible)
3.	Increased pain with 1/10-1/4 grain (not unusual)
4.	Increased pain with 1-2 grains (usual but avoid)

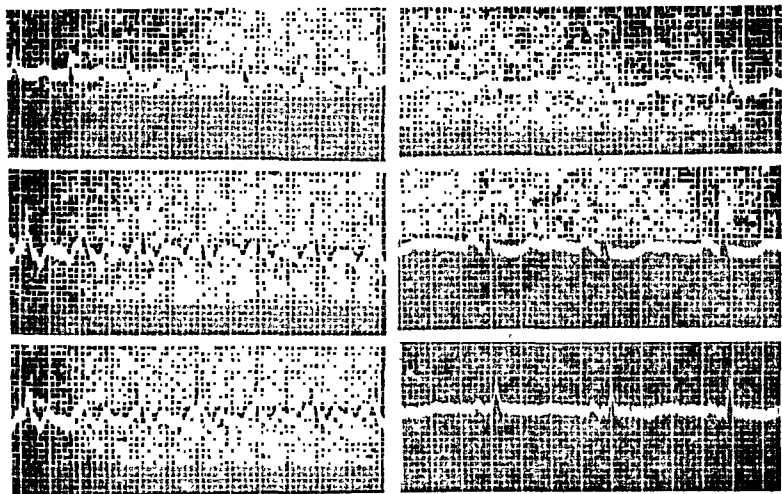


FIG. 2. Electrocardiogram showing auricular flutter, which followed digitalization when auricular fibrillation was present. Normal rhythm on right.

tuitarism. Myxedema following thyroid surgery is naturally a primary myxedema, as is also the myxedema from thyroiditis, in which a hard diffuse enlargement of the thyroid gland is present. While there are many clinical differences between panhypopituitarism and primary thyroid myxedema, there are rare cases of hypopituitarism in which all the clinical signs of primary myxedema occur.

Myxedema in these cases is, therefore, the most outstanding disturbance in hypopituitarism, but other glandular deficiency may lurk in the background, particularly pituitary hypoadrenalism. In these cases desiccated thyroid may be poorly tolerated, precipitating an acute adrenal insufficiency. Thus routine roentgenologic examination of the skull in patients with what appears to be spontaneous myxedema is indicated especially in those who have not been operated upon for goiter or have a goiter, and particularly in those who have hypotension and complete suppression of menses.

The use of desiccated thyroid when not specifically indicated has other dangers. Ordinary doses are not likely to have a serious effect on the heart of a person without myxedema unless,

of course, coronary insufficiency is present. With large doses, latent diabetes may become clinically significant. In 1931, I<sup>2</sup> reported our observations of patients who developed exophthalmic goiter following the use of desiccated thyroid for weight reduction. To be sure, this must be a relatively rare occurrence, considering the large number of people who take thyroid. From my experience with patients for whom thyroid has been prescribed, I would estimate conservatively that there are many more people without thyroid deficiency taking thyroid than there are people taking thyroid for myxedema.

### Thyroid Addiction or Self-Induced Hyperthyroidism

For some people large doses of thyroid are a source of energy and perhaps mental stimulation

TABLE 2.—CHOLESTEROL VALUES

Date	Basal Metabolic Rate Percentage	Pulse	Cholesterol Mg. per 100 cc.
March 15, 1938	+80	100	112
October 22, 1938	+49	84	175
May 3, 1939	+10	80	274

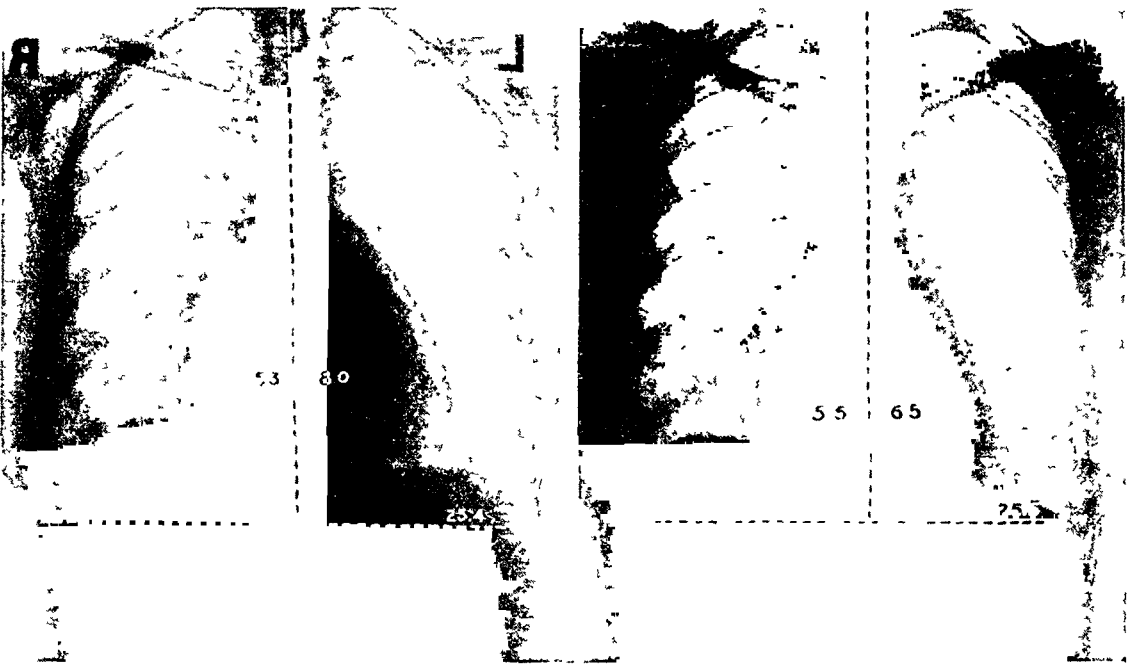


FIG. 3. Roentgenogram of heart during auricular fibrillation (left) and during normal rhythm (right).

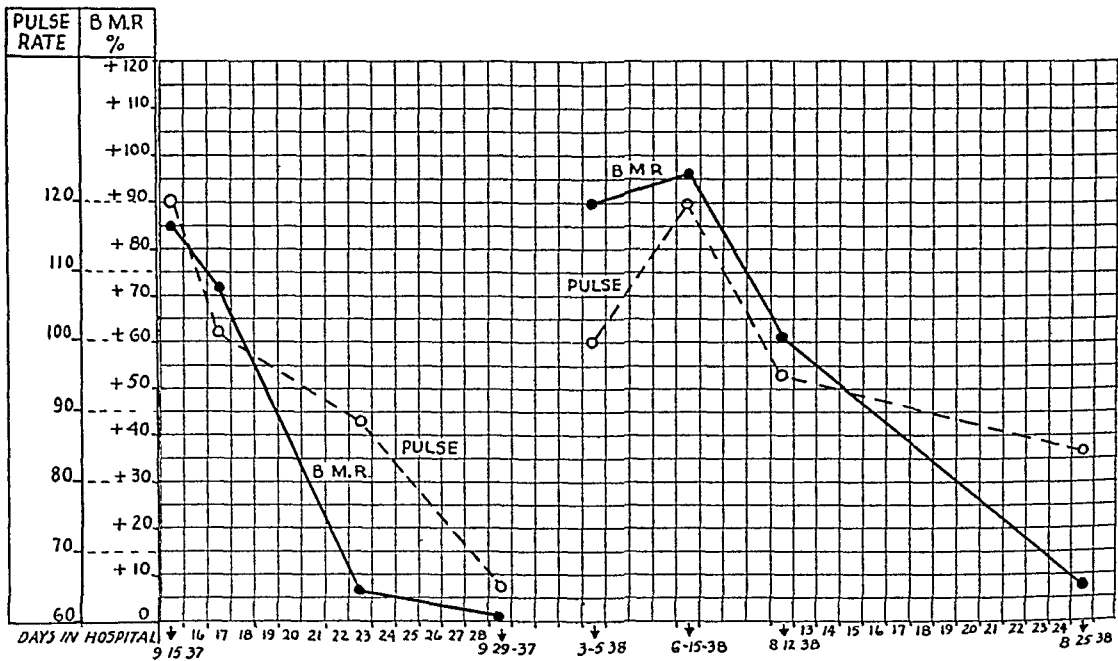


FIG. 4. Chart showing rapid fall in pulse and basal metabolic rate on two occasions while patient was in hospital.

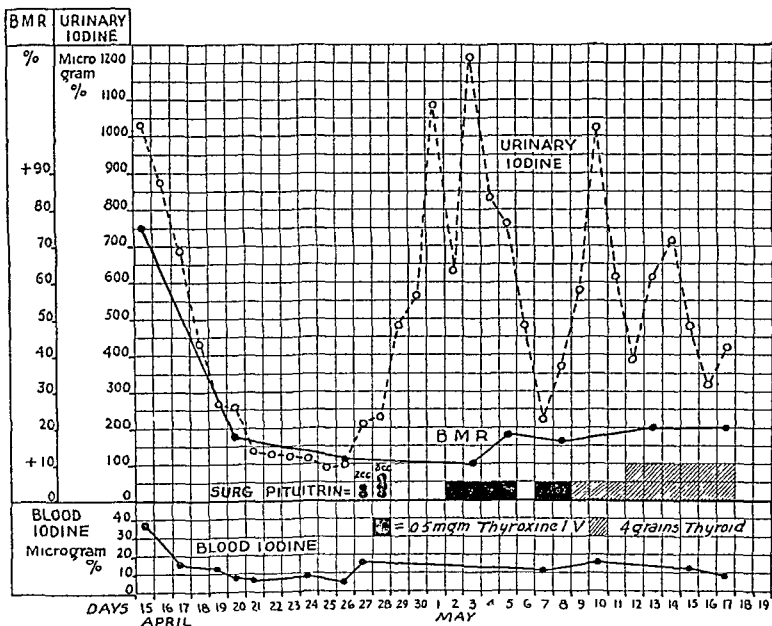


Fig 5 Chart showing urinary iodine excretion while patient was in hospital. Note rise after injections of thyroxine and ingestion of desiccated thyroid. The increase in urinary iodine after injection of pituitrin is being investigated.

or intoxication. Others use large doses of thyroid in an attempt at weight control. In fact, some people indulge in this method of stimulation secretly, yet consult a physician for the resulting symptoms. Some even submit to a subtotal thyroidectomy for symptoms which they have induced secretly by self-administered thyroid. The new drug laws should prevent this, but there are illegal ways of obtaining thyroid, just as there are ways of obtaining morphine.

What are the reasons for suspecting the secret self-administration of thyroid, or, one might better say, thyroid addiction? This possibility should be suspected in patients who have clinical evidence of hyperthyroidism, in whom a typical history of thyrotoxicosis can be elicited, but who, on examination, have a thyroid gland of normal size and consistency. Palpation of the thyroid

gland is a great help in diagnosis. Less than 2 per cent of patients with exophthalmic goiter have a gland which on palpation can be considered normal. Thyroid addiction should also be suspected in patients who have had a subtotal thyroidectomy and who continue to be thyrotoxic without palpable recurrent or persistent hyperplastic remnants.

My first experience with this type of case occurred some fifteen years ago when a patient who later became psychotic, who had been operated upon for hyperthyroidism without benefit and subsequently died of heart failure, was reported by social workers to have concealed in her room many empty bottles labeled desiccated thyroid. No further proof of self-administration was obtained, but this incident served as a reminder of this possibility.

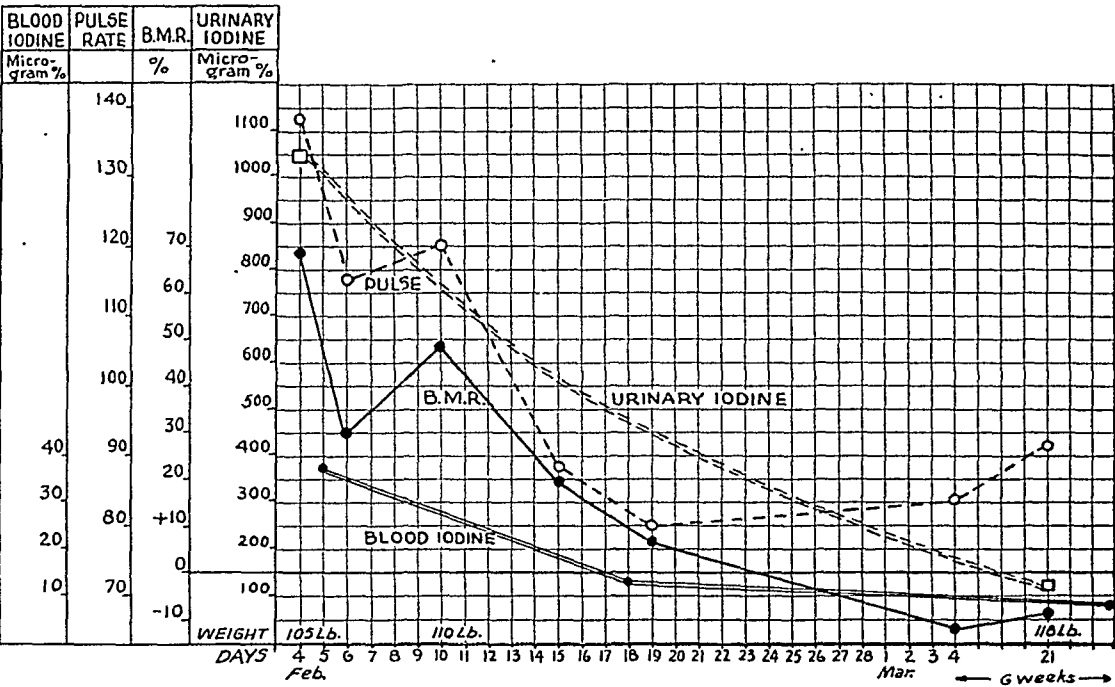


FIG. 6. Chart showing observations when thyroid was discontinued.

The most recent case observed was of special interest because of the cardiac findings. The patient had continued to lose weight since a radical subtotal thyroidectomy was performed by a reputable surgeon eight months before. She had also developed auricular fibrillation. When questioned as to the possibility of taking thyroid, she denied it. No thyroid remnants were palpated, and the basal metabolic rate was +45 per cent. The pulse rate was 140 and totally irregular. The skin was warm, moist, and flushed. Tremor, stare, and slight exophthalmos were also present.

The proof of self-induced hyperthyroidism was demonstrated as follows: On analysis of a forty-eight hour urine specimen, a quantity of iodine was found which exceeded by five times the amount which is found in severe exophthalmic goiter. On this basis, her daily intake was estimated at 8 to 10 grains or more a day. The total blood iodine was 12 micrograms per cent, which was slightly elevated but not helpful in diagnosis. When confronted with the statement that thyroid had been recovered from the urine and that proof of purchase existed, a confession was obtained. When the patient was questioned concerning the reason for taking thyroid and the amount, the reply was "a small handful daily to provide pep." Since stopping thyroid, the heart has decreased in size, its rhythm is regular, the pulse

rate is normal, and the weight has increased. To date no clinical evidence of myxedema has occurred (Figs. 1, 2, and 3). Needless to say, such persons must be rather unstable, although after the effects of thyroid wear off they hardly can be called truly psychopathic.

If iodine studies are impossible, a one to two weeks' hospital stay usually will bring about a normal metabolic rate and disappearance of hyperthyroid symptoms. With discontinuation of the thyroid, the basal metabolic rate drops rapidly. I was deceived by the rapid drop of the basal metabolic rate in one patient. On one occasion it dropped from +85 to +8 per cent in nine days, and on another occasion from +65 to +6 per cent in twelve days. Not until urinary iodine studies were made did I realize that this was possible. With the drop in metabolic rate, there was also a drop in pulse rate and a disappearance of hyperthyroid symptoms and signs (Figs. 4 and 5). The cholesterol was 112 mg. per 100 cc. of blood with a metabolic rate of +90 per cent, and 175 mg. with a rate of +49, whereas when the rate was +10 the cholesterol was 271 mg. (Table 2).

From these observations it appears that either the basal metabolic rate drops quickly after discontinuance of large doses of thyroid or a true basal metabolic rate is not obtained when the pa-

tient is under the influence of thyroid. This discrepancy occasionally occurs in patients with extremely toxic thyroid glands whose first metabolic test may exceed +100 per cent but on subsequent days may be +60 to +70 and remain at that level.

Another patient continued to take thyroid tablets while in the hospital, having had a bottle of them smuggled into her room in a candy box. This patient ran a high metabolic rate and lost weight under observation on 4,000 calories daily. A glucose tolerance test showed a diabetic type of curve. Although the thyroid gland was normal to palpation, a subtotal thyroidectomy was performed and a normal gland was found.<sup>4</sup> Two months later the metabolic rate was still elevated and all symptoms persisted. Later, on readmission to the hospital, a search of the patient's room revealed thyroid tablets in a handbag. The basal metabolic rate returned to normal and the symptoms disappeared. Urinary iodine studies gave results similar to those in the other cases (Fig. 6). Some months later she developed myxedema, which now has been controlled for four to five years with  $\frac{1}{2}$  grain of thyroid daily.

Another patient who took large doses of desiccated thyroid had a basal metabolic rate of 100 per cent. The total blood iodine was 42.7 micrograms per cent, and the urinary output of iodine was 2,436 micrograms in twenty-four hours. It is well to point out that with a large output of urinary iodine one must be careful to inquire if an iodine preparation, such as Lugol's solution, has been taken. A patient with exophthalmic goiter on iodine in the usual doses of 10 to 30 drops a day has a total blood iodine of 50 to 75 micrograms

per cent, and a twenty-four hour urine output of 35,000 to 90,000 micrograms.

Even with adequate proof of thyroid ingestion, not all will confess. One patient repeatedly observed in the hospital never did admit taking the tablets, since she apparently did not take them to the hospital with her (Figs. 4 and 5). Several others who were not observed in the hospital also would not admit thyroid addiction even though blood and urinary iodine studies for a period of twenty-four hours were pretty conclusive. Some patients apparently take thyroid in large doses so that they can eat as they please without weight gain. In others the motive of desiring to attract attention or sympathy seems a possible cause.

Many nervous persons with anxiety states or neurocirculatory asthenia may have a high metabolic rate, and with rest in bed the metabolic rate may come down. Because of this possibility, a patient should not be accused of self-administration of thyroid unless the clinical picture is one of hyperthyroidism. With the exception of exophthalmos and an abnormal gland, induced hyperthyroidism is indistinguishable from the real hyperthyroidism, and considerable detective work sometimes is necessary to establish thyroid addiction.

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### NATIONAL CONFERENCE ON VENEREAL DISEASE CONTROL IN NOVEMBER

A national conference on postwar venereal disease control will be held in St. Louis, Missouri, November 9-11, under the auspices of the U.S. Public Health Service, it was announced on September 7 by Surgeon General Thomas Parran, and Dr. J. R. Heller, Jr., Chief of the Venereal Disease Division of the Public Health Service, Federal Security Agency.

"The war has brought large increases in venereal disease infections in many parts of the world," said Dr. Heller. "Simultaneously, however, science has produced new drugs, and medical research has produced new methods to combat syphilis and gonorrhea.

conference," said  
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mine the best methods for giving wide application to recent advances in treatment of venereal diseases. Scientific papers will be presented by outstanding workers in the newer treatment methods. The U.S. Public Health Service, the National Research Council, and medical departments of the Army and

the Navy will report their findings on the effectiveness of penicillin in syphilis and gonorrhea, and

tensive treatment  
ks with arsenicals

dissemination of information to the public, and the development of new methods of control. Private physicians and hospitals will also make recommendations regarding their participation in the program."

Dr. Heller will outline to the conference specific questions which have grown out of developments in venereal disease control during recent years, specific answers to which, it is planned, will be formulated at the conference sessions.—*Release from the Office of War Information*



# SOME COMPLICATIONS OF CATARACT EXTRACTION

JOHN H. DUNNINGTON, M.D., New York City

THE removal of the crystalline lens has been discussed for many, many years. Every phase of the subject has been thoroughly reviewed time and again, yet to ophthalmologists it is still the most intriguing of all operations. Our interest in it does not wane, we talk about it on every occasion, we champion modifications in technic, we point with pride to our successful results, and we are equally chagrined at our failures. To my mind, this continued study of the problem is but evidence that the millenium, perfect cataract operation, is not at hand, for we still have complications to vex our minds and try our souls. It is of these vexations and tribulations that I speak.

The complications of cataract extraction may be divided into early and late manifestations. By early is meant those occurring either at the time of operation or during convalescence, while the term "late" is reserved for those not manifesting themselves until a considerable length of time has elapsed. This discussion will deal with some of the early mishaps because proper management of them does much to reduce the incidence of the late complications. Since time will not permit a complete coverage of the whole subject, I have selected three complications which I consider to be of greatest importance—viz: (1) hemorrhage into the anterior chamber, (2) iris prolapse, and (3) delayed restoration of the anterior chamber.

## Hemorrhage Into the Anterior Chamber

This complication has been the subject of intensive study by Wheeler,<sup>1</sup> Vail,<sup>2</sup> DeVoe,<sup>3</sup> and many others.<sup>4-10</sup> The literature is filled with statistics on its incidence and relationship to general disease, as well as on the merits of various prophylactic and therapeutic measures. Without going into a detailed discussion on all these points it is well to review some of them. Some ophthalmologists feel that this is a rare complication, while others see it with surprising frequency. The statistics on the incidence of its occurrence vary from 1 per cent to 35 per cent. DeVoe, in a careful analysis of 453 consecutive cases, found some postoperative bleeding to be present in 20 per cent. I agree with the statement of Vail, quoted by DeVoe, that "in a small series of cases carefully observed and recorded the frequency of

hemorrhage is apt to be greater than in a larger series less carefully watched."<sup>3</sup> The role of vascular hypertension<sup>3,4,9-11</sup> has received considerable attention, but suffice it to say that in carefully observed cases the incidence of postoperative hyphemia is no greater in those with high blood pressure than in those with normal arterial tension. The presence of diabetes<sup>3,10,11</sup> has long been thought to increase the chances of postoperative hemorrhage, yet DeVoe's analysis showed that in 40 diabetics bleeding occurred in 22.5 per cent, in contrast with 20 per cent in the entire group. My impressions are that hemorrhage does occur more frequently in diabetics, and that they are particularly prone to develop recurrent hemorrhages late in convalescence. Trauma is also considered a frequent cause of the hemorrhage, but this same author obtained a definite history of injury in only 8.4 per cent of cases with postoperative bleeding, a figure entirely consistent with my own experience. Vitamin deficiencies are much in the limelight as contributory factors in the production of hemorrhage into the anterior chamber, a suspicion which investigators have not been able to substantiate. If, however, a patient is obviously in need of these magic pills, no harm will result from their administration as preoperative and postoperative measures. Therefore, since we are unable to prevent this complication by these general measures, what can be done to lessen its incidence? I agree with Vail, who states, "The cause is, therefore, probably a purely local one."<sup>2</sup> Attention to the technical details both at the time of operation and during the convalescence are, therefore, of great importance.

Bleeding at the time of operation can be lessened by (1) adequate preoperative sedation, usually obtained by the use of 0.09 Gm. of nembutal an hour beforehand; (2) complete paralysis of the eyelids and thorough anesthesia accomplished by one of the standard methods of lid block, and by instillation of a local anesthetic plus subconjunctival and retrobulbar injections; (3) the avoidance of an unnecessarily large conjunctival flap; and (4) the placing of the incision at the limbus rather than in the sclera.

Hemorrhage during convalescence is also more prone to occur when the conjunctival flap is large and the section deep, particularly if combined with undue trauma at the time of the operation.

The role of corneoscleral sutures in preventing postoperative hemorrhages has been stressed by

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944.

From the Department of Ophthalmology, College of Physicians and Surgeons, Columbia University, and Institute of Ophthalmology, Presbyterian Hospital, New York City.

many authors, notably Stallard.<sup>12</sup> This writer reported no hemorrhages in 107 cases when this method of wound closure was employed, whereas previously he had seen it in 30-35 per cent of his cases. Equally enthusiastic approval of this method of reducing the frequency of this complication has been voiced by Lindner,<sup>13</sup> Leech and Sugar,<sup>14</sup> McLean,<sup>15</sup> Kirby,<sup>16</sup> and others,<sup>5,17</sup> while a more conservative estimate of its value is borne out by the analysis of DeVoe,<sup>3</sup> and by the statement of Ellett,<sup>18</sup> who says, "The freedom from postoperative anterior chamber hemorrhage which Mr. Stallard has enjoyed since adopting this suture has, I am sorry to say, not been my fortune. . . . I see such hemorrhages with unpleasant frequency in spite of this or any other form of suture." While the discussion still rages, it is my belief that in the final analysis proper coaptation of the wound edges will prove to be but one of many important factors in preventing postoperative hemorrhage. Removal of the corneoscleral sutures is a ticklish job which requires adequate anesthesia, good illumination, and delicate manipulation. Hemorrhage into the anterior chamber is not an infrequent complication of this maneuver when there is inadequate anesthesia or when the suture is grasped with the forceps before it is severed. Since it is now generally recognized that most hemorrhages into the anterior chamber come from the wound rather than from the iris, it behooves us to see that the edges are in proper apposition at the close of the operation, and to keep them that way during the healing period. This means not only a properly performed operation, but adequate postoperative nursing care. Included in the "musts" is the avoidance of a maneuver capable of producing pain at the time of the dressings or removal of the sutures. There has been considerable discussion of the relative frequency of hemorrhage into the anterior chamber in various types of operative procedures<sup>3-6,19,20</sup>—e.g., intracapsular and extracapsular extraction both with and without iridectomy. Time will not permit a review of these conflicting reports, but suffice it to say that no definite information is at hand that intraocular hemorrhage occurs more frequently with one method than with the other.

In spite of preventive measures, hemorrhages do occur and demand treatment. Usually even those that fill the anterior chamber disappear promptly under rest and atropine. Time and patience are required for some, but, judging from my experience, the vast majority need nothing more. Heat is contraindicated because it often increases the amount of bleeding and changes a mild case into a severe one. If the bleeding is severe enough to cause the wound to

gape and the iris to become prolapsed, we have to consider resuturing of the wound and excision of the prolapse. Recurrent hemorrhages into the anterior chamber occurring late in convalescence are usually from the iris and offer a more serious prognosis, but the treatment is essentially the same. Many authors have advocated all sorts of medications<sup>7</sup> to increase the clotting time of the individual, but in my hands they have not proved to be of value.

### Iris Prolapse

The occurrence of this complication is largely due to one of three causes:

1. Faulty reposition of the iris at the time of operation.
2. Improper closure of the wound.
3. Subsequent wound rupture.

The prevention of those prolapses occurring at the time of operation is self-evident. Proper reposition of the iris at the time of operation has been stressed since time immemorial, yet one still finds surgeons who hope that a miotic will draw the iris from the wound. In my experience this is not a safe procedure. When a peripheral iridectomy has been performed and the iris cannot be freed from the wound at the end of the operation, it is my practice to proceed at once with the completion of the iridectomy. Incarceration of the iris may also result from poor judgment in the selection of the type of iridectomy. I agree with Kirby<sup>16,21</sup> that in the presence of fluid vitreous or when vitreous loss can be anticipated a wide complete iridectomy should be done. If the peripheral iridectomy is reserved for the uncomplicated cases with mobile irides, the incidence of prolapses will probably be no greater in this group than in those who have a complete iridectomy.

Kubik<sup>19</sup> and others<sup>10</sup> feel that preservation of the sphincter muscle is helpful in preventing a prolapse of the iris. They argue that the vitreous is thus held in place by the contracted pupil, which in turn favors prompt restoration of the anterior chamber. While this condition may exist in certain instances, usually when the vitreous herniates forward the whole iris is carried with it toward the posterior surface of the cornea. A sufficiently large opening in the iris to allow the aqueous humor to pass from the posterior chamber into the anterior chamber is, to my mind, more important than the preservation of the sphincter muscle in reducing the number of iris prolapses.

Improper closure of the wound results from inclusion of foreign material, such as lens capsule or iris tissue, between the lips of the incision, or from faulty suturing. Such a wound may close temporarily only to open subsequently. It is this

secondary reopening that causes the iris to prolapse. We are all familiar with loss of the anterior chamber at the time of dressing or upon removal of the sutures. Such accidents can usually be avoided by attention to every minute detail of these maneuvers. I cannot stress too strongly the necessity for great care at the time of the first dressing. Pain from touching the upper lid or from exposure to bright light produces a violent blepharospasm often sufficient to rupture the wound, particularly one that is not properly sutured. The value of corneoscleral sutures in preventing this secondary wound rupture is widely accepted. Ellett,<sup>18</sup> Stallard,<sup>12</sup> Leech and Sugar,<sup>14</sup> and McLean<sup>15</sup> have all presented statistics corroborating the reduction in number of iris prolapses since using some form of corneoscleral sutures. The support afforded by such stitches is most reassuring, but even they do not make it impossible for the wound to open. A severe hemorrhage into the anterior chamber, a sudden squeeze of the eyelids, or increased intraocular tension, are all familiar causes of secondary wound rupture with or without corneoscleral sutures. There are diverse opinions on the treatment of iris prolapse. Some feel that its presence, no matter how small, demands immediate attention;<sup>5,19,21,22</sup> others, recognizing the hazards incident to early operation,<sup>5,8,10,19,23</sup> favor delay. Those who believe that emergency measures are necessary insist that if the iris is promptly replaced<sup>7,16,21</sup> and a 1 per cent solution of eserine salicylate instilled,<sup>10,11,22,23</sup> an iridotomy or iridectomy is often not necessary, an experience I have not had the good fortune to enjoy. Others advocate cauterization of the prolapsed portion of the iris using trichloroacetic acid<sup>6,8,16,24</sup> and carbolic acid or the actual cautery,<sup>8,16,21,22</sup> while many more favor excision<sup>17,19,21,23</sup> of the prolapse and the closure of the wound with or without a conjunctival flap as the occasion demands. Cauterized wounds are slow to heal and necessarily produce more scar tissue than a cleanly sutured one. Those who favor cauterization point to the ease and safety with which it can be done, reasonable arguments in the days when akinesia and retrobulbar injections were not in use. In nervous individuals, when even these measures are not entirely safe, pentothal sodium can be employed. The smooth and rapid anesthesia induced by this drug makes it ideal for use in these cases. It can be recommended, and wider use of this anesthetic agent in apprehensive, tense patients whose eyes are extremely sensitive will do much toward lessening the complications of this operative maneuver.

The decision of when to operate must remain an individual one. A small iris prolapse completely covered by conjunctiva can sometimes be

left alone, but one devoid of such a covering should, in my opinion, be promptly excised. Those larger prolapses with definite evidences of wound rupture usually demand prompt repair. The sequelae of an iris prolapse, viz., cystoid scar, updrawn pupil, secondary glaucoma, and sympathetic ophthalmia, are familiar to all of us. We recognize their seriousness, so let's do our best to prevent them by properly caring for all iris prolapses.

### Delayed Restoration of the Anterior Chamber

While the seriousness of this complication is universally recognized, it has not received adequate consideration. Since an ounce of prevention is worth many pounds of cure in dealing with delayed restoration of the anterior chamber, it behooves us to study its causes. Kirby<sup>16</sup> has mentioned among them such conditions as low general vitality, faulty body chemistry, and low eye vitality; but in my experience faulty operative technic is the chief cause. In some older patients the wound is a bit slower in healing, but these are the exceptions rather than the rule. The general condition of the patient, therefore, seems to have but little to do with it. The most important preventive measure is proper wound closure. This means not merely the introduction of properly coaptating corneoscleral sutures but careful toilet of the wound. In the extracapsular extraction particular attention must be paid to bits of capsule and lens matter which may become incarcerated between the lips of the wound. Such a happening is prone to occur with an unsuccessful attempt to extract the lens in its entirety. The capsule ruptures after the lens is dislocated below, and remnants of the capsule and lens matter remain in the upper part of the anterior chamber in contact with or actually incarcerated in the incision. "When such an accident occurs it is particularly important for the surgeon to free the wound of all such material. In the intracapsular extraction iris tissue is the chief object of concern unless, of course, vitreous has been lost. When the vitreous presents but the hyaloid does not rupture, it will usually recede in time, and the sutures can be tied without incarcerating any of it in the wound. A hasty attempt to close the wound may result in squeezing the prolapsed vitreous between the lips of the wound, thereby rupturing the hyaloid. I have found the simple request to the patient to close the eye helpful because the upward rolling of the eye tends to approximate the edges of the wound. This can be done without removing the speculum, and in a short time the vitreous recedes and the sutures can be safely tied. In some instances it

is wiser to remove the speculum and wait for a few minutes before proceeding with the tying of the sutures and the toilet of the wound. If, however, the hyaloid ruptures and some vitreous actually escapes I know of no way of preventing incarceration, and prompt closure of the wound is indicated.

There still remain a certain number of cases in which, in spite of proper suturing and adequate toilet of the wound, the anterior chamber does not reform. The iris is in position and no obvious defect exists, yet the days pass and the anterior chamber does not reform. Vail<sup>2</sup> believes spasm of the orbicularis is an important factor in these cases and advocates a vertical blepharotomy in the upper and lower lids. Girdle and Sugar<sup>24</sup> have also endorsed this procedure as a prophylactic measure. To my mind delayed closure is due to one of two possibilities:

1. The iris becomes adherent to the anterior face of the vitreous, a happening which is particularly prone to occur when an extraction without iridectomy has been performed although it can take place when a peripheral iridectomy has been done. Because of such an adhesion the aqueous humor in the posterior chamber cannot pass through the pupillary area to cause a reformation of the anterior chamber. Such a state of affairs calls for energetic efforts to dilate the pupil, for with its dilatation the interior chamber is often promptly reformed. It is my conviction that the instillation of a strong miotic, e.g., 1 per cent solution of eserine salicylate, at the time of operation, is contraindicated. It is irritating to the iris and extensive adhesions are more apt to occur when it is used. Furthermore if the vitreous has a tendency to herniate forward through the pupil at the time of operation, a strongly contracted iris may actually result in an incarceration of the vitreous in the anterior chamber.

2. A filtering cicatrix is present. This possibility has to be borne in mind in all cases where there is no other obvious cause for a delayed restoration of the anterior chamber. If such filtration can be established by the fluorescein test, I believe it is an indication for a prompt closure of the filtering cicatrix. Epithelization of the anterior chamber and secondary glaucoma are the expected outcomes of delay in dealing with this complication. Detachment of the choroid is often but another manifestation of this condition, and its persistence, along with an absent anterior chamber, should make one doubly suspicious of a leaking wound demanding closure. Such wounds are not always easy to close. In my experience covering the wound with a conjunctival flap drawn down from above after the method described by Kuhnt<sup>3</sup> is not always suffi-

cient. In addition, it is often desirable, after locating the small opening, to freshen its edges and close it with a suture before covering the wound with a conjunctival flap. Cauterization with carbolic acid, 60 per cent alcohol, or galvanometer, as advocated by Green,<sup>17</sup> has not, in my hands, been successful.

The consequences of delayed restoration of the anterior chamber may be enumerated as follows:

1. Corneal opacification
2. Peripheral anterior synechia
3. Adhesion between the anterior face of the vitreous and posterior surface of the cornea
4. Adhesion between the iris and the anterior face of the vitreous
5. Detachment of the choroid
6. Epithelization of the anterior chamber
7. Secondary glaucoma

Since most of these consequences predispose to the development of secondary glaucoma it is most important that a prompt restoration of the anterior chamber be effected. It is my belief that glaucoma occurring after cataract extraction usually arises from a delay in the reformation of the anterior chamber and that prompt attention to or prevention of this complication will do much to lessen the incidence of this dreaded aftermath.

### Summary

Hemorrhage into the anterior chamber usually occurs from the wound rather than from the iris. Unless it is very severe it clears without producing any serious effect upon the ultimate visual result. The proper treatment consists of complete bed rest and thorough atropinization. Hot compresses frequently do more harm than good.

Iris prolapse results from faulty reposition of the iris, defective wound closure, or subsequent wound rupture. Corneoscleral sutures do much to prevent its occurrence. Prompt excision of all prolapses is the rule, with the possible exception of small ones adequately covered by conjunctiva.

Delayed restoration of the anterior chamber usually means either faulty wound closure or the presence of a filtering cicatrix. Proper toilet of the wound and adequate sutures are our best prophylactic measures. Prompt repair of all leaking wounds will lessen the incidence of epithelization of the anterior chamber and postoperative glaucoma.

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## Discussion

Dr. E. Clifford Place, *Brooklyn*—For the purpose of this discussion I analyzed 100 recent operations for cataract in my service in the Brooklyn Eye and Ear Hospital. They comprised private as well as clinic cases and were performed by various operators—by myself, and by members of the resident and of the attending staff. Fifty-five were intracapsular extractions, 35 were extracapsular, of which 12 were attempted intracapsulars, 6 were linear extractions, 1 loop, 1 Homer Smith, and 2 dissections of secondary membranes.

The following complications occurred in this series, during the operations or convalescence.

The capsule ruptured in the 12 cases noted above in which the cataract was safely removed by the extracapsular method.

Iris prolapse occurred in 3; all were small.

Hemorrhage of all grades occurred in 10. Some of these occurred at the time of operation, from the wound; in 3 there was a history of trauma from the patient, and the majority of those occurring after operation appeared from the fourth to the sixth day, a time interval which is in line with the reported experience of others. In only one of these cases was diabetes present, and in only one was there high blood pressure—240 over 106—and this was one of those associated with trauma. So it appears that neither of these constitutional states was a prominent factor in this group. All these hemorrhages absorbed and a satisfactory visual result was obtained, with one exception.

There was delayed formation of the anterior chamber in 4, in 2 of which the chamber was flat until the ninth day. All finally filled without the need for active treatment. There was striate keratitis in 16, and all cleared before the patients left the hospital; iritis in 2; vitreous loss at operation in 3. One of these was a dislocated lens in the case of loop extraction, and a second was in a high myope with fluid vitreous. In both of these vitreous loss was expected before operation. One patient vomited persistently, ruptured her wound, and suffered iris prolapse and hemorrhage. This was the one

patient mentioned above who did not obtain a good visual result. As a matter of fact, she died of coronary occlusion a few days after operation; this diagnosis was confirmed by autopsy. In one case operation apparently precipitated thrombosis of the central retinal vein, for it was not present shortly before operation on an immature cataract.

One suffered acute urinary retention.

Two developed corneal dystrophy, and both cases cleared up with administration of Dr. Dunnington's magic vitamin capsules.

One had dermatitis of the lids, probably from use of bichloride ointment on the pads.

Five choroidal detachments were noted—there may have been more.

One retina detached promptly after intracapsular extraction, with a big tear, and one patient developed meningitis and wound infection.

In one dacryocystectomy was performed before the cataract operation, and the latter healed without infection.

This sounds like a formidable list, but on looking it over it appears that most of these complications were minor in character, and only a few more serious; many were not preventable, while some were.

It seems to me Dr. Dunnington has wisely chosen the three complications of greatest importance, from the viewpoint of their seriousness to the future of the eye as well as of their preventability.

To be sure, my own attitude toward most cases of anterior chamber hemorrhage is much like that of Vail, who regards it as midway between serious and trivial. The single hemorrhage may be trivial even though it be a generous one, but none of us can regard with unruffled equanimity the recurrent cases which we sometimes meet. Certainly trauma plays a part, and it is equally certain that in the single hemorrhages with or without trauma, the source of the bleeding is the wound itself and not the iris. I once had the disagreeable experience of seeing blood run down from the wound into a chamber because at a dressing the lower lid was touched with sufficient force to cause a slight rupture of the wound. Yet in another case in which the man fell out of bed with force enough to fracture his humerus no ocular complication whatever developed. Hemorrhages will continue to occur in this, one of our major ophthalmologic operations, but I agree with Dr. Dunnington that accurate placement of the section and tight suturing are important aids in its prevention.

I should like further to emphasize his admonitions about not grasping the suture with forceps when attempting its removal. The prestidigitator says "The quickness of the hand deceives the eye," but it is apt to be the other way around, when a patient suddenly jerks his eye upward when you have a grip on a suture. I know of one case in which the wound was ripped wide open in this manner, with loss of considerable vitreous.

Iris prolapse has for me much more serious connotations. Sympathetic ophthalmia can and does occur, in both treated and untreated cases, and much more frequently glaucoma develops. Even complete iridectomy does not prevent prolapse, for a pillar may force itself into the wound and become

incarcerated, to be discovered at the first dressing or subsequently. It is in this connection that I fear postoperative vomiting more, I think, than anything else. Before the days of suturing I saw more than one eye whose contents were expelled during the first postoperative night by uncontrollable vomiting, and now even with sutures I still fear it, for it is in these cases I find most of my cases of iris prolapse. It seems impossible in the strain and stress of prolonged vomiting to avoid squeezing the eyes. I feel, however, that with improved methods of preoperative sedation, avoidance of giving anything by mouth for at least twelve hours after operation, and the use of codeine by hypo—never morphine—for postoperative pain, we have reduced the frequency of postoperative vomiting, and we do have fewer cases of severe iris prolapse. Of course, suturing plays a huge part.

Is it not possible that in some instances spasm of the orbicularis occurs during the time of recovery from the akinesia, thus producing pressure on the globe sufficient to produce some prolapse? Vail speaks of the "constitutional moment" in which the slightest pressure by the lids or movement of the eye might reopen the wound, with resulting hemorrhage or iris prolapse. Since a well-closed cataract wound seals itself almost immediately with prompt restoration of the chamber, it is conceivable that this "moment" may, in some cases, occur early enough to produce these complications sooner than in others.

My practice is to treat small prolapses which are covered by conjunctiva with trichloroacetic acid, and to excise the larger ones and close, either with a flap or with direct suturing. To leave a bulky incarceration of the iris is to invite not only a poor visual result from high astigmatism, but far more serious, the development of secondary glaucoma, which is so unsatisfactory to deal with.

I am glad Dr. Dunnington mentioned pentothal anesthesia. I have . . . a variety of eye . . . extending its use . . . in our work.

It has been my good fortune not to see the serious type of delayed chamber formation of which Dr. Dunnington speaks. True, cases of delay occur, and many are accompanied by choroidal detachments. Formerly these detachments worried me considerably and I kept the patients in bed until they subsided. Now I have even sent them home from the hospital with the detachment present, so long as the chamber was even partially restored. I have never seen one that did not subside satisfactorily—often abruptly overnight—though in one case of trephining for glaucoma, in an elderly patient, it lasted for months.

I should like to ask Dr. Dunnington how many days he thinks it advisable or safe to wait before considering active surgical interference in cases of delayed restoration of the chamber.

To my mind, the two greatest advances in the past few years in the prevention of complications in cataract surgery are the more universal adoption of paralysis of the orbicularis and the use of sutures to

close the wound. These, with meticulous attention to every detail of technic before, during, and after the operation, help to assure, now more than ever, a satisfactory result in this, ophthalmology's most interesting surgical procedure.

Dr. Ivan Koenig, *Buffalo*—A discussion of a paper written by Dr. Dunnington on the phases of cataract complications is like discussing the gospel, because of its authoritative veracity. There are other complications of cataract surgery that could be mentioned, but inasmuch as the paper refers to only three important ones, these few minutes will be devoted only to those phases.

Hemorrhage into the anterior chamber is not, as a rule, a serious complication. Most of these hemorrhages absorb quite readily and in no way interfere with the visual result, but in order to stress the importance of postoperative hyphemia, I should like to cite briefly a case of my own. A man, aged 64, had an uncomplicated intracapsular extraction with a small peripheral iridectomy. There was a moderate arteriosclerosis without hypertension or any pathologic finding which would contraindicate an extraction or make one expect any serious complication. At the first dressing the wound was in apposition; the anterior chamber was reformed; no prolapse or incarceration of iris was observed. He was allowed out of bed on the fourth day. Late the same day a small hyphemia was noted. He was ordered to bed but the orders were not carried out and on the fifth day a large hematoma was noted at the wound and the anterior chamber was filled with hemorrhage. To make a long story short, an enucleation was performed on this eye six months later because of a secondary glaucoma.

This case is cited because it is my firm belief and my practice to recognize a hyphemia and respect it with immediate rest in bed until absorption has at least begun. I agree with the essayist that hot applications are liable to do more harm than good. Magic pills, too, have been tried, but I still see anterior chamber hemorrhages. It has been my good fortune, or shall I say misfortune, to observe anterior chamber hemorrhage develop, while I was examining the eye with a hand slit lamp. The bleeding in this case came from the wound above and not from the iris and developed on the sixth day.

The occurrence of anterior chamber hemorrhage in my cases is not as frequent nor as severe, since I have discontinued making conjunctival flaps, either previous to incision or those made with a Graefe knife. My incisions are now made at the limbus with a keratome and enlarged with scissors. In this way there is practically no conjunctival flap and the insertion of a corneal episcleral suture seems less complicated and more secure.

The report of Stallard that in 107 cases no anterior chamber hemorrhage occurred is nothing short of phenomenal. He attributes this to his suture, which is supposed to bring about better coaptation. Dr. Dunnington states that this may be the answer to this problem, but other factors enter into it. I agree with him, and am reminded of a statement once made by Dr. James White in regard to sutures for muscle operations. He read a paper in which

he stated: "Breathes there an ophthalmologist who, during some attack of insomnia, has not thought up an original stitch or muscle operation?" A statement similar to this can apply to the various sutures used by various operators in cataract cases. It is my feeling that the more complicated the suture the greater the possibility of complications developing in either the operative or postoperative period. In reviewing the last 100 cases of cataract extraction I have done, I found that hemorrhage occurred more frequently at night and usually after the fourth and before the seventh postoperative day. In this small series I found 21 cases of anterior chamber hemorrhage.

The question of iris prolapse has not been as frequent a complication since the use of firm corneal episcleral sutures. I have seen only one case of iris prolapse in my last 100 cases, and this a week ago. There were a few cases of iris incarceration but only one visible prolapse. Thomas Allen, of Chicago, in discussing this condition, said, "Prolapses sometimes occur in the best of hands but many of them indicate poor surgery." It should be remembered that even though well-placed sutures have reduced the incidence of iris prolapse, I wish only to re-emphasize Dr. Dunnington's warning about false security of sutures, when doing the first few dressings. It may not be common for visible prolapses to occur during the dressing, but I feel that iris incarcerations develop at this time more frequently than we admit. My feeling is that iris prolapses that are not covered with conjunctiva should be taken care of within twenty-four hours. There have been times when this has occurred that I have made the repair in the room of the patient rather than the operating room for the psychologic effect on the patient. Surgical excision has usually been my approach to this condition. Cauterizing with either chemical, thermal, or coagulating agents is apt to cause more iris reaction.

At this point I think it worth emphasizing the purpose of the iridectomy. Whether you make a complete iridectomy or a peripheral iridectomy it is necessary to make "A large enough opening in the iris to allow the aqueous to pass from the posterior to the anterior chamber." This practice of the essayist will help prevent many prolapses and incarcerations of the iris.

Delayed formation of the anterior chamber, fortunately, does not occur often. Theoretically, it should develop more frequently following an extracapsular extraction, because of capsular and cortical material's getting in the wound. I recall one case that developed after the first dressing and remained long enough for anterior synechia and subsequent secondary glaucoma to develop. This only re-emphasizes the warning given by Dr. Dunnington about the first dressing.

To search for one cause for this complication in all cases will reveal a series of them. Many reasons could be cited to refute some of the theories of delayed anterior chamber formation.

Orbicularis spasm has been cited as a cause of this complication by Vail, Gradle, and Sugar. I recall two such cases in which blepharotomy was done because of deeply recessed globes; both chambers refused to form for several days. Orbicularis spasm or involuntary postoperative squeezing may be a factor, but I do not feel that blepharotomy will prevent it.

It would seem to me that the adhesion formation of the iris is the result rather than a cause of anterior chamber collapse and that these adhesions are the result of a leaking wound.

To repair such a leaking wound would be simpler if this area could be found without too much manipulation. The greatest problem in such cases is to have an area that is leaking, large enough to be visible, inasmuch as the slit lamp can't be used on early postoperative cases.

Dilatation of the pupil is one of the greatest aids in the reformation of anterior chambers. It should be remembered that the mere instillation of daily atropine may not be sufficient. Neosynephrin hydrochloride or adrenalin packs following cocaine instillation give a more efficient dilatation in collapsed chambers, along with the atropine.

Apprehension on the part of the patient can repeatedly reopen the wound and to relieve this apprehension, I feel that sufficient barbiturates are invaluable.

Dr. Dunnington's paper stressed three very important complications of cataract surgery which should not only illuminate us but should stimulate us all to diligently seek the real answer to these and other cataract problems.

#### LOUIS LIVINGSTON SEAMAN FUND

The New York Academy of Medicine announces the availability of the Louis Livingston Seaman Fund for the furtherance of research in bacteriology and sanitary science.

One thousand dollars is available from the fund for assignment in 1944. This fund has been made possible by the terms of the will of the late Dr. Louis Livingston Seaman, and is administered by a Committee of the Academy under the following conditions and regulations:

1. The Committee will receive applications

from either institutions or individuals up to November 1, 1944. Communications should be addressed to Dr. Wilson G. Smillie, Chairman of the Louis Livingston Seaman Fund, 1300 York Avenue, New York 21, New York.

2. The fund will be expended only in grants-in-aid for investigation or scholarships for research in bacteriology or sanitary science. The expenditures may be made for securing of technical help, aid in publishing original work, or purchase of necessary books or apparatus.

## CALCIFIC DEPOSITS IN THE SHOULDER\*

HARRISON L. McLAUGHLIN, M.D., New York City

**D**URING the past decade a considerable number of sore shoulders have been studied by the Fracture Service of the Presbyterian Hospital in New York. Included were more than 1,500 cases in which the symptoms centered around a calcific deposit. Of the latter group, various series of cases were subjected to almost all the many forms of therapy advised for the condition and the results were compared with several hundred control cases in which no or only sedative therapy was employed. The striking similarity between the results of the control cases and those of the cases treated by all but a few of the available therapeutic measures prompted analysis of the pathology observed at operation and its relation to the clinical behavior of the condition.

Gross, microscopic, and bacteriologic examinations of the pathology found in a considerable number of lesions explored in various stages of the disease have made it possible to reconstruct what might be termed the life cycle of the so-called "calcified deposit" and its resulting syndrome, commonly called "calcified bursitis." As Codman<sup>1</sup> has pointed out, the deposit is neither calcified nor is it in the bursa.

### Origin

The earliest microscopic evidences of the lesion consist of hyaline degeneration in the collagen of the tendon fibers. This is followed by fibrillation and the formation of what Codman called "straps" or loosened bands of fibers within the substance of the tendon. Motion of the part plus progression of the degenerative change further loosens these strands, finally breaks them free from their attachments to the surrounding more normal tendon, and grinds them into rice-like bodies occupying a small cavity within the tendon substance. Continued motion aided by necrosis continues to grind the rice-like fragments into progressively finer particles until the material in the cavity comes to resemble the contents of a wen. Such collections of tendon debris showing no opaque shadow by x-ray have been encountered not infrequently in the course of shoulder operations done for other conditions.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944.

From the Fracture Service of the Presbyterian Hospital in New York, and the Department of Surgery, the College of Physicians and Surgeons, Columbia University.

\* Dr. Otto Steinbrocker's discussion of this paper and Dr. Lippmann's, which follows it appears on page 2240.

<sup>1</sup> Codman, E. A.: The Shoulder: Rupture of Supraspinatus Tendon and Other Lesions in or About the Subacromial Bursa, Boston, 1934.

### Course

How, when, or by what mechanism calcium salts are deposited in this debris in sufficient concentration to produce a shadow by x-ray is not yet understood. There is no reason to believe this mechanism to be any different from that resulting in the deposition of calcium salts in an old tuberculous node where the matrix is formed by caseation necrosis of lymphoid tissue rather than by degenerative necrosis of tendon tissue. It is possible that such nodes if subjected to the same factors present in the short rotators of the shoulder might also produce irritative phenomena resulting in inflammation and pain.

The symptoms associated with calcific deposits (which may occur in any tendon and have been found in most) are the result of an inflammatory reaction situated in the vascular peritendinous structures adjacent to the tendon involved rather than in the tendon itself. In the short rotators of the shoulder the tendon sheath is represented by the floor of the subdeltoid bursa. Therefore, while deposits in most other tendons produce a tenosynovitis, shoulder deposits produce a subdeltoid bursitis. The histologic pathology of this inflammatory reaction is not extraordinary except for the rather constant presence of giant cells which most investigators agree represents a response to foreign body in the tissues. Bacteriologic studies all have been negative for aerobic and anaerobic organisms and for filtrable virus. Therefore it seems logical to conclude that the inflammation, per se, constitutes a foreign-body reaction to irritation by the contents of the deposit.

The deposit, whether or not it contains enough calcium salts to show up by x-ray, constitutes a foreign body which nature normally would attempt to eliminate by the institution of an inflammatory reaction. This may be the explanation for some of the acute conditions in shoulders having no calcific shadow to account for their symptoms. For the mobilization of any inflammatory reaction the *sine qua non* is adequate circulation. In its early stages the deposit is within the substance of the almost avascular tendon, under which circumstances a minimal reaction, if any, is possible. This fact is the basis for the only logical explanation of what has been one of the most puzzling features of the condition—i.e., the commonplace incidental finding of a calcific deposit by x-ray in the complete absence of any past or present symptoms. Such quiescent lesions are considered to be those in which



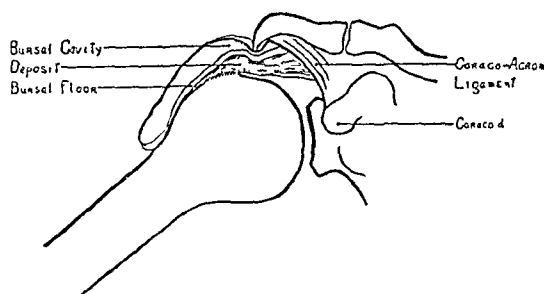


FIG. 1

the deposit is buried deeply enough in tendon tissue so that no peritendinous (bursal floor) irritation takes place.

When it is possible to follow such quiescent lesions it is found that a great many of them eventually develop symptoms in some degree and it is reasonable to assume that most painful lesions were at some early stage quiescent. Symptoms may come on suddenly or gradually. The latter are usually mild in character and may be constant or intermittent, whereas the former are usually acute and constant. Regardless of their character, it has been adequately demonstrated that the occurrence of symptoms coincides with and results from the initiation of the peritendinitis, or bursitis, as it is usually called. This inflammatory phenomenon takes place when the material in the deposit works through the overlying tendon and comes into physical contact with the adjacent vascular tissue. Several factors are constantly at work toward this end.

1. The tendon substance overlying the deposit in the shoulder and separating it from the floor of the bursa is the seat of progressive degeneration and weakening due to attritional causes.

2. The constant milking action exerted upon the material in the deposit by movement of the tendon under the edge of the acromion and coraco-acromial ligament tends to force it in the path of least resistance—i.e., through the overlying tendon in the direction of the bursal floor (Fig. 1).

3. Use and motion of the extremity and especially overuse or sudden strain may rupture the weakened tendon fibers overlying the deposit.

Inasmuch as the amount and degree of inflammation and, ipso facto, the character of the symptoms depend upon the amount of foreign-body irritant involving the synovial tissue at any one time, the acuteness or chronicity of any case will be affected if not governed by the relative prominence of any one of these three factors. If progressive degeneration of the overlying tendon

allows only a few particles of the deposit to work through at a time, the symptoms will be mild and commonly intermittent. If a rupture of the overlying fibers allows a major portion of the deposit suddenly to come into contact with the under surface of the bursal floor, an acute attack will almost certainly follow.

A great many chronic cases are marked by intermittent exacerbations of pain alternating with quiescent periods. Occasionally this goes on for years. It is apparent that the exacerbations are the result of a few particles of the deposit having worked their way through the overlying tendon to set up a small peritendinous reaction beneath the floor of the bursa. Eventually these particles are disposed of by polymorphonuclear action, the reaction subsides, and the opening in the tendon becomes sealed over by fibrous tissue. This process may be repeated at intervals until the deposit is eliminated by continued depletions or an acute attack may supervene. The implication behind the clinical behavior of repeated mild attacks is that absorption of the material is possible by inflammatory action alone if the amount of material to be absorbed is small. As will be seen in the following discussion, this method of eliminating the deposit differs somewhat from that observed in the ordinary acute case.

Certain painful shoulders due to irritation by a calcific deposit tend to stiffen. Whether the disease be acute or chronic, this will always happen in some degree when the normal function of the extremity is unduly restricted by sling, swathe, bed rest, or voluntary inaction on the part of the patient. Experience has shown neither sling nor any other form of functional restriction to be indicated except as a temporary sedative measure during the acute phase of the condition. It is of utmost importance that mobility of the part be maintained during all other stages of the disease because otherwise the inflamed floor of the bursa quickly adheres to the apposed bursal roof, sometimes to the extent of complete obliteration of the bursal cavity. Such adherence of the walls of the bursa superimposes one of the conditions commonly termed "frozen shoulder" upon the pain resulting from the calcific deposit to make the therapeutic problem much more difficult. Acting in this way, the deposit constitutes only one of the many causes of frozen shoulder, all cases of which present approximately the same clinical picture although different pathologic findings, depending on the primary cause of the stiffness. In those having a calcific deposit as the primary cause, adhesive bursitis has been a constant operative finding and a rather major factor in the production of stiffness. In frozen shoulders due to other causes

the bursa may be innocent of any pathologic change.

The character of the pain in chronic calcific esions is apt to vary. It was formerly difficult to understand why, in two cases having deposits of equal size and consistency by x-ray, one should suffer from a constant ache and the other from nothing more than a catch of pain on certain motions of the arm. Operative findings have demonstrated that the character of the symptoms are governed to some extent by the position of the deposit. Lesions in the subscapularis seldom produce chronic symptoms and tend to remain quiescent until an acute attack occurs. In the supraspinatus and anterior part of the infraspinatus a constant ache is the rule during the chronic stage. In the posterior part of the infraspinatus and *teres minor* the chronic stage is apt to be characterized by sharp catches of pain in certain positions. Under both local and general anesthesia it has been demonstrated clearly that pain is aggravated by tension of the tendon host but becomes acute when the inflamed tissue superficial to the deposit is squeezed against the under edge of the acromion or coraco acromial ligament. Consequently it is logical that a lesion in the superior portion of the cuff, where it is under constant tension by gravity and brushes against the acromion at almost every movement, should produce more severe and constant symptoms than one in the anterior or posterior part of the cuff, where impingement is possible only in certain extreme positions of the arm and where gravity plays a relatively minor role.

Many acute attacks are preceded by chronic complaints, while many others deny antecedent symptoms. Some follow strain or overuse, while others are without demonstrable cause. Regardless of the mode of onset, operative findings constantly have demonstrated a common factor that seldom if ever is observed in the chronic case—i.e., a large quantity of the deposit in contact with the synovial floor of the bursa, surrounded by a correspondingly large and acute inflammatory reaction.

### The Acute Lesion

The commonly encountered "acute bursitis" is, with few exceptions, the result of reaction to a calcific deposit. The only macroscopic or microscopic differences between the acute and chronic lesion are:

1. The degree and extent of the inflammatory reaction.

2. The consistency and tension of the material in the deposit. At first glance it would seem that the quality of the material differed in the two phases. In the chronic stage it is dry, cheesy, or *wen-like* and tends to be infiltrated

through the tendon within a relatively poorly circumscribed cavity. In the acute stage it is invariably wet, greasy, and commonly the consistency of toothpaste. In addition it is under distinct tension within a rather well-defined cavity, from which it is apt to spurt when an incision is made into it. This change is also apparent by x-ray, where the chronic lesion is usually represented by a rather dense shadow with irregular or ill-defined borders and the acute lesion by a well-defined, globular, frequently flocculent shadow of less opacity. Operative findings have demonstrated this change in the physical and x-ray characters of the lesion to be the result of nothing more than infiltration and dilution of the dry chronic deposit by inflammatory exudate. In addition to the infiltration and dilution, the main factor causing increased tension in the deposit appears to be swelling of the adjacent tissues.

Continued inflammatory response leads to progressively increasing tension within the deposit. At this stage the lesion looks exactly like a furuncle presenting in the bursal floor. It also behaves like a furuncle in that internal tension eventually (usually within a week or two) reaches a point where rupture takes place. Unlike a furuncle, the contents are disgorged into the closed cavity of the bursa. Here they are quickly enmeshed in a network of fibrin, set upon by leukocytic action, and within the course of a few days are eliminated to such an extent that no further shadow is visible by x-ray. The worst part of the acute pain disappears with the release of tension following rupture. The residual pain disappears within a short time following disposal of the disgorged material and subsidence of the inflammatory reaction. A single deposit ordinarily results in only one attack of acute pain and it is rare for any subsequent symptoms to occur once the attack is over. Multiple deposits, on the other hand, are potentially prone to result in repeated acute attacks. This is apparently because each individual deposit goes through the various stages of its own life cycle independently of and uninfluenced by the others. The result, as has been observed not infrequently, is that a patient may recover from one attack either spontaneously or under some form of treatment and have the offending deposit disappear, only to suffer from a subsequent attack or attacks due to the remaining deposits.

### Prognosis

The condition appears to be self-limiting, with nature eventually attending to the spontaneous elimination of each deposit in one of two ways—i.e., gradual depletion by repeated inflammatory responses of mild degree each one of which disposes of a small portion of the material, or sud-

den and complete elimination of the whole deposit by rupture and discharge of the contents into the bursal cavity. As a result, the prognosis for eventual recovery from any particular attack is reasonably good, regardless of the type of treatment, at times in spite of it, or even if the condition is untreated. No permanent defects or disabilities have been noted except for the occasional complaint of recurrent rheumatic pains in the region, usually associated with bad weather or overuse. It is, however, reasonable to assume that fibrous tissue replacement of the deposit area predisposes to local weakness in the tendon, which more easily may become the site of rupture in later years. Because of its self-limiting characteristics, the therapeutic problem presented by this lesion therefore concerns not the question of recovery but speed of recovery.

### Therapy

There are only two available types of therapy, palliative and curative. There are only two forms of therapy simulating nature's method of cure and having proved curative effects, opening of the deposit by knife or needle. Other methods are chiefly palliative or empirical in effect and their professed curative powers when examined in the light of the known pathology and compared to adequate controls have been disproved or found to be empirical or indirect and uncertain. Purely sedative measures act to minimize the severity of the symptoms until nature effects a cure, whereas the various analgesic or local anesthetic procedures act to obtain temporary mobility of the part which, with good luck, results in rupture of an acute lesion.

### Needling Procedures

Various needling technics, including regional infiltration, irrigation of the bursa, multiple puncture, and aspiration of the deposit, have been practiced in sufficient quantity to allow adequate evaluation. Of these, puncture and aspiration of the deposit has been the only method constantly productive of certain and speedy relief of symptoms. Others may be followed by a speedy cure in the acute lesions but analysis indicates such results to depend upon either unpremeditated rupture of the deposit by the needle, rupture in consequence of the temporary mobility made available by the novacaine, or coincidental spontaneous rupture. Aspiration of some of the deposit is aimed for not because it is essential to the success of the procedure but because it serves to inform the operator that he has accomplished his main purpose—i.e., puncture and deflation of the deposit. Irrigation, per se, has no direct effect upon the speed of cure. More than 500 acute cases have been treated by aspiration. In

those patients who had an adequate procedure done, as evidenced by the appearance of calcific particles in syringe or irrigated fluid, immediate relief was the rule and complete cure within a five-day period was a constant result. The only recurrences have been in cases of multiple deposits.

Needling was tried in several hundred chronic cases. Temporary relief was obtained in less than 50 per cent and permanent relief in less than 25 per cent of all such cases. In the light of the known pathology these poor results are reasonably explained by the fact that the chronic deposit is physically not amenable to aspiration by needle. Even when such a deposit is opened by the needle, its cavity again becomes sealed off from the bursa after a small portion of the calcific material has been eliminated. Any attempt to aspirate the contents of a chronic deposit is inadvisable because of the physical characteristics of the lesion under ordinary circumstances.

### Operation

More than 100 cases have been explored and the deposit removed. The results are certain and complete relief follows more rapidly than with any other method of treatment. Removal of any additional deposits, as well as the offending deposit, lessens the risk of subsequent attacks of pain. Some of these additional deposits may be situated out of reach of a needle. The operative procedure is a minor one and may be carried out under local anesthetic, but is much more easily and efficiently completed under a light general anesthesia. More than two to five days' postoperative hospitalization or disability is uncommon.

Operation is indicated in only a small percentage of cases. It is most strongly indicated in chronic lesions when the pain or disability is sufficient to make it worth while from the patient's point of view, and in acute cases showing multiple deposits. It is occasionally imperative in acute cases not amenable to aspiration, the symptoms of which are jeopardizing the course of a precarious pregnancy or systemic disease. Occasionally it is resorted to following failure of a needling procedure. The cases operated upon included all phases of the condition and the pathology observed in conjunction with the clinical behavior of a considerable number of similar cases in which operation was not performed forms the basis for the statements made in this report, and it also forms a basis for the logical evaluation of therapy in calcific lesions:

1. It is first determined whether the symptoms by reason of their severity, duration, or resultant disability warrant curative or purely palliative measures.

2 Regardless of the answer to paragraph 1, mobility and function of the extremity must be maintained at a maximum, by a program of exercises if necessary.

3 If the condition is chronic and the circumstances warrant curative therapy, operation is the method of choice, aspiration by needle is a poor second choice, offering only about a 25 per cent chance of success, and palliative therapy, including all forms of physical therapy, radiotherapy, or administration of oral or parenteral drugs, does little except temporarily lessen the symptoms.

4 If the condition is chronic but does not warrant curative therapy, home measures, including heat, aspirin, and a program designed to maintain mobility of the arm are usually just as efficient as anything that can be done in office or hospital.

5 If the condition is acute, curative measures are warranted. The method of choice is aspiration of the deposit by needle, followed by a program of exercises and sedation. Exception to this choice of treatment should be considered when multiple deposits are present or when any other indication for operation is present.

## BICIPITAL TENOSYNOVITIS

ROBERT K. LIPPMANN, M D, New York City

**P**ERIARTHRITIS, now more generally known as frozen shoulder, was originally described by Duplay<sup>1</sup> in 1898 and so was removed from the vague classification of arthritis. Duplay ascribed the pain and stiffness that characterize the condition to an adhesive inflammation of the subacromial bursa and recommended brisement forcé for its cure. This concept and therapeutic approach have persisted for almost fifty years in spite of meager pathologic support. Our surgical studies, as reported in the *Archives of Surgery*,<sup>2</sup> have revealed subacromial bursa inflammation in only a few of these cases. Instead tenosynovitis of the long biceps tendon and sheath was consistently encountered. This present paper summarizes these studies and their clinical application.

### Clinical Data

It is not generally appreciated that periarthritis, or "frozen shoulder," runs a well defined and typical clinical course—that it is not merely a stiff, painful shoulder requiring therapeutic mobilization. A remarkable feature of this illness is its inevitable spontaneous cure. I am sure the reader will have difficulty in recalling a case of frozen shoulder presenting a history longer than one year, and our records indicate that the illness generally lasts approximately ten months. Wide variation occurs, however, and the duration may vary anywhere from three months to two years.

According to our records it is the commonest of shoulder conditions, affecting chiefly women (65 per cent). It occurs most often in those between the ages of 40 and 60, but it has been en-

countered in patients as young as 25 and as old as 80. Trauma is not generally the precipitating cause, the majority of patients describing an insidious onset. For some unknown reason, possibly postural, the condition is surprisingly common in association with invalidism and particularly with chronic cardiac and pulmonary disease. Another remarkable attribute of this condition is the failure of recurrences to develop. Bilateral periarthritis is not particularly uncommon, but a recurrence in the same shoulder has not been encountered in either hospital or office experience.

### Symptoms

The typical case of periarthritis, or frozen shoulder, commences with a mild ache in the shoulder or arm, which grows inexorably worse and is accompanied by progressive stiffness. The pain grows in intensity, becoming almost insufferable, and the stiffness slowly increases to the point of almost complete scapulohumeral fixation. After months of growing distress (often increased by scalene spasm and pain down the arm), the pain starts to abate and shoulder motion begins to improve. Undulant progress continues until the shoulder is again clinically normal. During the period when the disease is progressing, the pain dominates the picture. In the period of improvement, stiffness is the most prominent complaint.

### Examination

Examination of the patient quickly reveals the curious and typical fixation that characterizes the condition—free and painless motion within a limited arc, severe pain when the limits

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944.

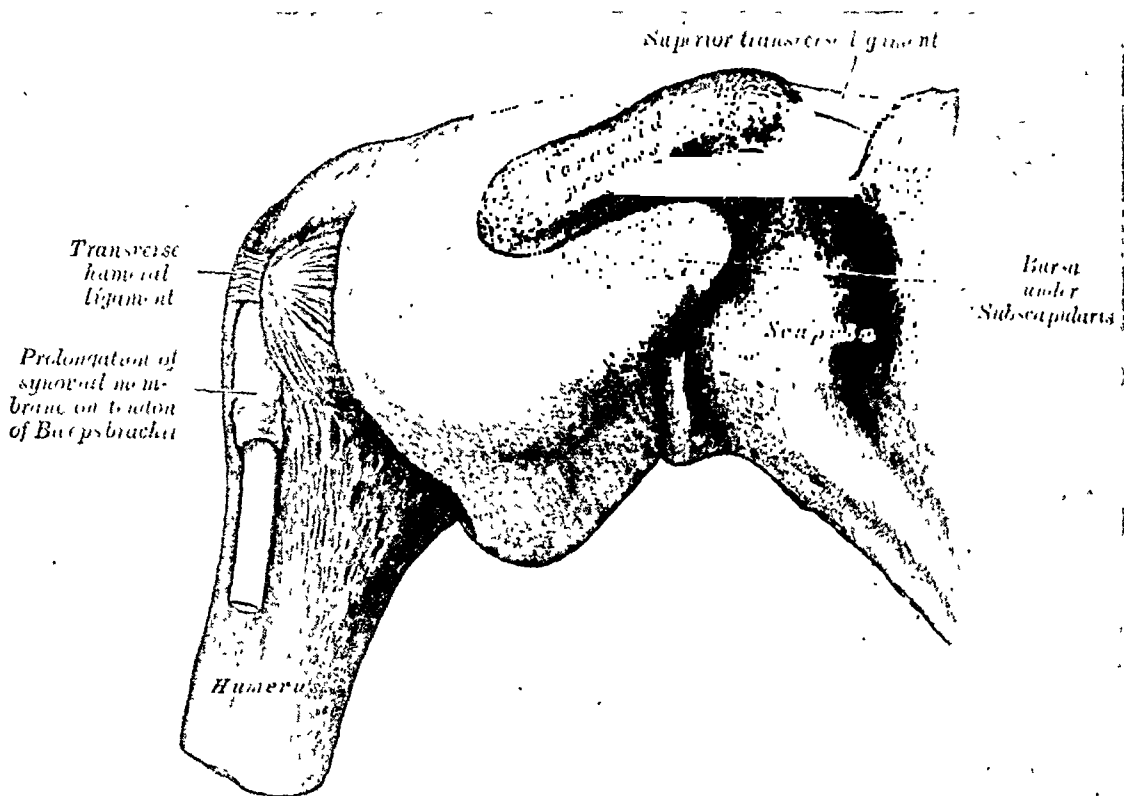


FIG. 1. The tendon sheath of the long biceps tendon is open above and communicates freely with the joint. The shoulder joint distended with wax (from Gray's anatomy).

are forced. Universally there is sharp tenderness over the bicipital groove and absence of tenderness over other aspects of the shoulder proper. The constancy of these findings is of great help in distinguishing the frozen shoulder from other conditions commonly involving that joint.

### Differential Diagnosis

The painful shoulder caused by calcified deposits is practically never stiff. In this condition the voluntary spasm of the shoulder musculature can be easily overcome and full shoulder motion may be obtained, though it is painful. Since the seat of the calcified deposit is usually in the musculotendinous cuff, the area above the greater tuberosity is exquisitely tender but the bicipital groove is not painful on pressure. I mention x-ray last in differential diagnosis, for I have encountered typical cases of frozen shoulder diagnosed incorrectly and mistreated because symptoms were attributed to a small and innocent fleck of calcium visualized in the supraspinatous tendon.

Musculotendinous cuff tears, in contrast to frozen shoulder, generally exhibit tenderness directly over the cuff area. In tears of the cuff passive elevation of the shoulder is unrestricted, while active elevation is painful, weak, and limited. In frozen shoulder this differential does not exist, active and passive elevation being blocked and painful essentially at the same level.

### Anatomy

The long biceps tendon possesses a few peculiarities which might account for its role as a trouble-maker in peri arthritis and which merit a brief review.

Anatomically, the biceps tendon sheath differs from other similar structures in the body by being closed only at the bottom. Its upper end communicates freely with the shoulder joint proper (Fig. 1). Moreover, the tendon slides freely between the joint and the sheath upon motion of the shoulder (Fig. 2). These observations show how easily inflammation can extend from the sheath below up and into the outer quadrant of the shoulder joint.

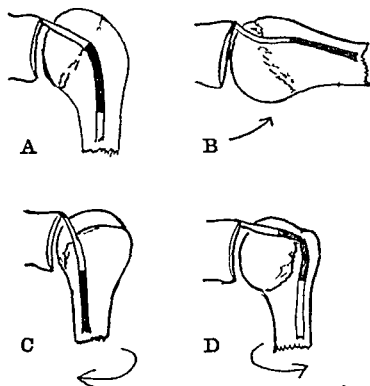


FIG 2 The bicipital tendon slides freely between sheath and joint proper as the shoulder is moved. A—Ventral position B—Elevation C—Internal rotation D—External rotation

It is of considerable importance to appreciate the fact that the long biceps tendon does not move in its groove in response to pull of the muscle to which it is attached. Motion of the biceps tendon in its groove occurs only on motion of the shoulder joint, and the biceps muscle performs a minimal role in producing motion of this joint. For this anatomic reason, an inflamed biceps sheath hurts when the shoulder is moved, whereas it does not hurt on elbow motion, which utilizes the biceps muscle. Briefly, the long biceps tendon mechanism is a passive one and is important only as a source of trouble when it functions improperly.

### Surgical Studies and Findings

The constancy of bicipital groove tenderness in frozen shoulder and the foregoing physiologic observations appeared to justify surgical investigation of this mechanism. Up to May, 1944, 32 cases of frozen shoulder had been so studied.

In all instances the subacromial bursa and underlying musculotendinous cuff were carefully explored and their condition noted prior to exploration of the biceps sheath mechanism. A short, deltoid splitting incision gives free access to these structures as well as to the biceps sheath. Individual case findings have been reported elsewhere. They have been so uniform, however, that it will serve present purposes best to discuss them together. In two cases tears of the cuff

STIFFNESS INCREASING ← 4 MONTHS TO		PAIN INCREASING → YEARS	
EARLY PHASE CASES		LATE PHASE CASES	
SUBACROMIAL BURSITIS		SUBACROMIAL BURSITIS	
PATHOLOGICAL FINDINGS		PATHOLOGICAL FINDINGS	
TENDON—MUSCLES FULL OR NORMALLY FULL		TENDON—ATROPHIC	
SHEATH—MUSCLES THINNING, INFLAMMATORY INTRUSION		SHEATH—THICKENED, FIBROTIC	
TENDON—MUSCLES SWOLLEN, INFLAMMATORY INTRUSION		TENDON—GLUED TO SHEATH WITH ADHESIONS	
INFLAMMATION—MILD		INFLAMMATION—MODERATE	

FIG 3 Summary chart showing the differences encountered in cases operated upon early and late in the course of the illness.

were encountered, one partial and one complete and in these cases secondary changes were noted in the overlying subacromial bursa. In both of these cases cuff tears were suspected prior to operation by the above described clinical criteria. In two cases, bursal adhesions without cuff tears were encountered. In all other cases the appearance of the synovia of the subacromial bursa was smooth and glistening. The sac contained no fluid and there were no adhesions. The underlying musculotendinous cuff was entirely normal. On the other hand, all explored cases showed inflammatory changes of varying degree involving the biceps tendon and sheath. Moreover, in practically all the cases studied, there was a variable degree of impairment of motion of the biceps tendon in its groove caused by peritendinous adhesions. For purposes of classification it was found useful to divide our preoperative material roughly into two clinical groups—early and late cases—i.e., cases selected for operation during the stage of progressively severe pain and stiffness and those in the later phase during which stiffness was the chief complaint. As might be assumed, more of the early cases were available for exploration because of the more severe pains during this period. While essentially the same type of fibroplastic inflammation characterized all the cases, this grouping brought to light certain important differences. In the early cases, the tissues were reddened, vascular, and edematous, and the tendon was dull, swollen, and discolored. In the later cases, the sheaths were thickened, fibrotic, and less vascular, the tendon was roughened and scarred and the acute inflammation was considerably diminished. Striking was the fact that in the

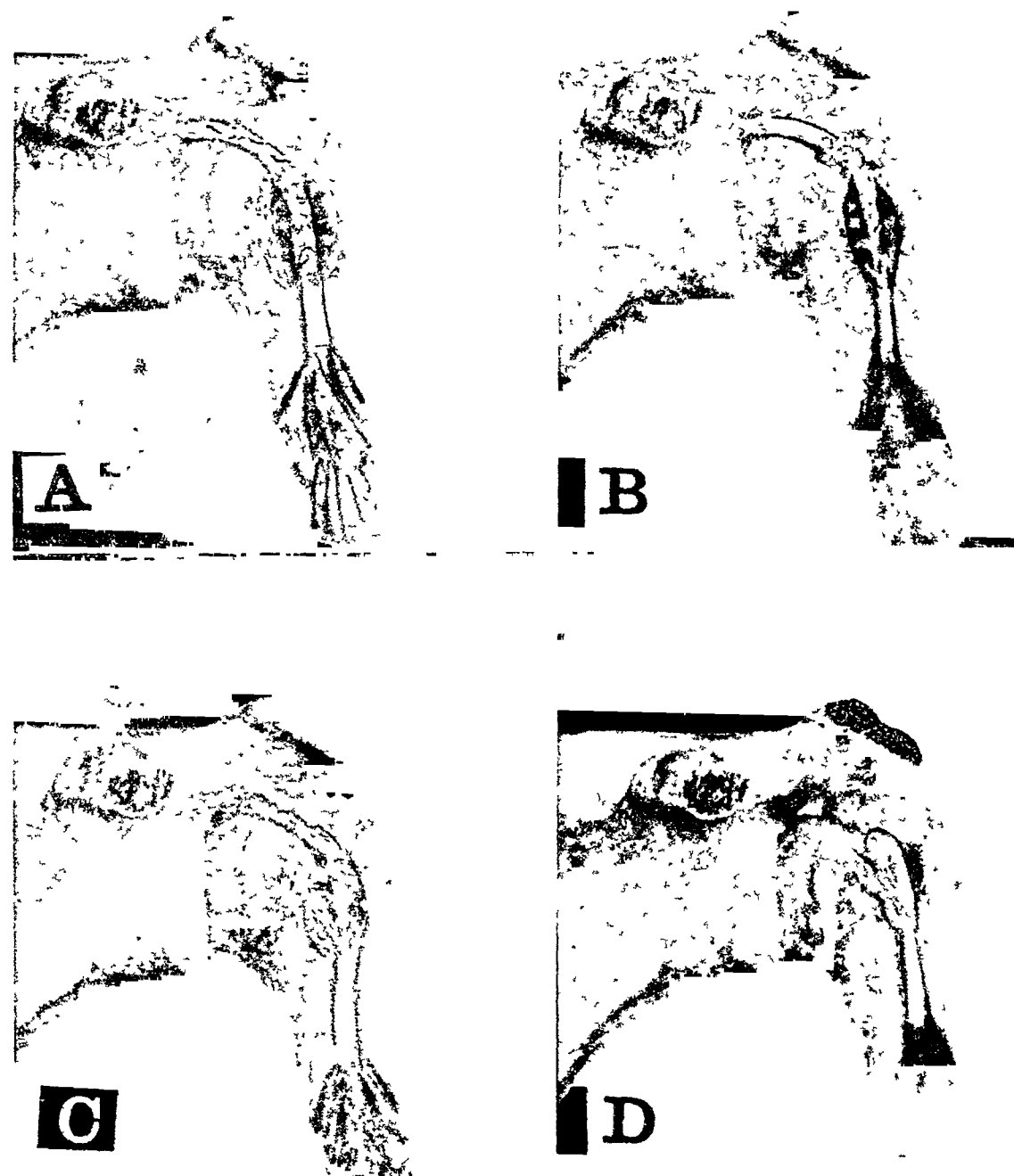


FIG 4 Pathologic sequence which appears to underlie most frozen shoulders as reconstructed from operative material.

A—Swelling, granulation tissue, and vascular infiltration about tendon.

B—Peritendinous adhesions forming. Inflammation commencing to subside.

C—Adhesions binding tendon to groove. Intra-articular tendon atrophic.

D—Cured. No inflammation. Biceps tendon firmly attached to lesser tuberosity. Intra-articular tendon disappeared.

early cases the tendon still was movable, whereas in the majority of the later cases it had become firmly bound down to the humerus with strong adhesions (Figs. 3 and 4).

#### Discussion

It is plain from these surgical studies that bicipital tenosynovitis is a pathologic change encountered with great frequency in frozen

shoulder. Can this lesion, then, be regarded as the underlying pathologic factor in the condition? The bicipital groove tenderness that characterizes all of these cases supports this contention, as does the fact that in the operating room all barrier to free shoulder motion generally vanishes as soon as the peritendinous adhesions are severed, although the exact mechanism of the block is still obscure. The easy access of the inflammation in the tendon sheath to the outer quadrant of the shoulder joint has been pointed out in the above anatomic considerations, and no doubt such extension does occur and may assist the tight tendon in binding down the shoulder. Is it possible that the reverse exists—that we are dealing with an inflammatory process primarily in the joint, with extension into the tendon sheath? Against this contention are the following facts: the joint itself is not tender and the clinical course is not that of a true arthritis. Moreover, in the operating room, release of the tendon immediately releases all shoulder restriction, indicating that no true contracture of the joint capsule is present. Finally, whatever intra-articular inflammation occurs appears to subside as soon as the tendon becomes fixed to the humerus.

The ultimate fusion of the tendon to the bicipital groove that has been observed in typical cases suggests an explanation for the spontaneous cure that characterizes this illness as well as for the clinical observation that, after a typical attack, recurrences never develop.

In this connection it is interesting to note that in 4 out of 150 anatomic shoulder dissections (2 $\frac{2}{3}$  per cent), Horvitz,<sup>2</sup> of Philadelphia, noted fusion of the biceps tendon to the lesser tuberosity with rupture of the intra-articular portion of the tendon.

### Therapy

The bicipital tenosynovitis that appears to underlie the frozen shoulder provides a sound basis for the evaluation of therapy. In conservative treatment, for example, brisement forced during the early part of the illness is obviously futile. Tearing of soft adhesions in the presence of marked inflammation serves only to cause more pain, and the adhesions promptly reform. This is in line with our clinical experience, which also supports the importance of rest, perhaps with palliative applications of heat or cold. Our experience with x-ray therapy in mild analgesic doses in over 30 cases was disappointing, with relief in only a small proportion of them.

In the latter part of the illness forcible manipulation under anesthesia occasionally produces startling results. The loud snaps audible during this procedure probably result from rupture of

the attenuated and functionless intra-articular tendon. In my experience, however, stretching of the arm at regular intervals with active exercise is more consistently helpful, less traumatic, and, in the light of the underlying pathology, appears more logical. A surgical method of treatment is also suggested by the pathological findings—namely, firm suture of the involved tendon to the adjoining lesser tuberosity. This procedure is easily accomplished through a small deltoid-splitting incision and it reproduces rapidly what occurs naturally so slowly and painfully. When the operation is performed during the early phase of frozen shoulder, while the tendon is still mobile, there is quite prompt relief from pain and improvement in shoulder motion follows rapidly and steadily. At the end of five or six weeks sufficient return has generally occurred to permit resumption of full activity. In considering surgical therapy, it is important to bear in mind the benign character of frozen shoulder. The most that surgery can accomplish is expedition. For this reason, I favor its employment only after careful exclusion of occult thoracic disease and then only when some clear-cut need for urgency can be presented by the patient. There are times when the saving of a few months of severe pain or invalidism appears well worth while and entirely justifiable. Results in such cases have been gratifying and will constitute the material of a separate report.

### Summary

The typical clinical aspects of periarthritis, or frozen shoulder, are reviewed, with emphasis on the fact that, though its duration is unpredictable, the condition almost invariably terminates spontaneously in complete recovery.

Surgical investigation on more than 30 cases of frozen shoulder has revealed that at least in most instances the subdeltoid bursa and underlying musculotendinous cuff are not involved and that, instead, tenosynovitis of the long biceps tendon and sheath is consistently encountered.

Adhesive tenosynovitis extends from the sheath into the outer quadrant of the shoulder joint proper, but the entire inflammatory process subsides spontaneously when the tendon becomes firmly attached to the bicipital groove and its motion is so obliterated.

The pathologic sequence underlying periarthritis provides a guide for the administration of conservative therapy and suggests a simple surgical approach when more rapid cure is desired.

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## Discussion

Dr. Otto Steinbrocker, *New York City*—As an internist or rheumatologist I deem it a privilege to take part in this unusual surgical program. Our understanding of shoulder disability will be greatly increased by Dr. Lippmann's surgical investigations and by the extensive clinical studies of Drs. McLaughlin and Bosworth.

Dr. McLaughlin has made a remarkably clear analysis of the evolution and the status of treatment of calcific deposits at the shoulder. A comparative study of various methods of therapy has been a much-needed contribution in this field. The study of a control series greatly enhances the significance of his observations on treatment even if I cannot subscribe to all of his conclusions.

Calcific deposits at the shoulder may occur in systemic disturbances, as in generalized calcinosis, gout, hyperparathyroidism, scleroderma, and other conditions. They are usually asymptomatic, like the silent deposits frequently found in otherwise healthy people. Acute calcific disorders, as Dr. McLaughlin has emphasized, often clear up after a brief period of symptoms without requiring any interference. When the patient clamors for relief we employ aspiration or two-needle irrigation with procaine. Surgery undoubtedly provides the most effective approach for some acute and chronic calcific disorders of the shoulder. Dr. McLaughlin has well summarized the indications for operation in acute cases urgently needing relief.

So far I have seen one patient with chronic shoulder disability associated with calcification presenting immediate indications for surgery. He showed a dense, almost stony calcification. In some instances in which we have failed to get satisfactory results otherwise, we have recommended excision of the calcific deposits. We felt that the changes in these cases were not as simple as they looked in the x-ray films, and that exploration would reveal additional pathology. Some patients, however, at the onset or at any time in their course, will not submit to surgery, or are unfit for it.

For the past six years we have employed local and regional analgesia in shoulder disabilities. My remarks are based on approximately 200 chronic cases, the majority of which received diagnostic or therapeutic blocks. We depend upon local or regional analgesia to relieve pain and relax muscle spasm in order to permit gradual and tolerable mobilization of the extremity. Their chief value seems to lie in the assistive motion and gentle manipulation which are permitted to be applied immediately. In chronic disability associated with calcification mere needling or attempts at aspiration without procainization are unsatisfactory procedures. In fact, the symptoms may be aggravated for twenty-four to forty-eight hours. The injection of procaine is made through the point of maximum tenderness, usually over the site of calcification. Often additional points of severe tenderness can be elicited. These are injected too. The same procedure is employed in periarticular fibro-

sis with palpable tender points. We have found local puncture and infiltration of procaine effective in 50 to 60 per cent of the chronic cases.

At any tender area skin hyperesthesia, when unrecognized, may prove misleading by actually representing segmental referred symptoms or conversion symptoms. Routine palpation in such cases and injection of the tender site or the calcification usually prove ineffective. In chronic calcific or periarticular disorders not responding with appreciable relief of pain and/or some relaxation of muscle spasm after two local injections, and the other measures, we use brachial plexus block. This is a more reliable method than local infiltration. We reserve it for those patients who fail to respond after the simpler local procedures.

Each infiltration, local or regional, usually is followed by variable but definite relief of pain and increased passive or active mobility. We have employed these measures in control cases without other treatment and have found the rate of recovery better than in patients treated by other nonsurgical methods or in those carried without treatment. The patients are injected once or twice a week. The average requirement is six infiltrations, the most twelve. The use of procaine is, of course, only the means to our objective. Once mobility is well under way we depend only on exercises, assistive motion, and physiotherapy. Patients without disability are not injected unless palpable tenderness is found accompanying the pain and a correct response is elicited by saline infiltration. Recurrences have been few.

Dr. Lippmann's paper sheds new light on the subject of the "frozen shoulder." Periarticular fibrosis or periarthritis is diagnosed also in the majority of the shoulder disabilities at our clinic. He has conclusively accounted for many of these obscure cases. We will now make it routine to search for the signs he has described. The term "frozen shoulder," however, has been found by us to be rather misleading. It implies a chronicity and unresponsiveness rarely seen by us in the type of case admitted to the medical and arthritis services.

Many a disabled shoulder sent to us as "frozen," after a variety of therapy, began to thaw out with the first brachial plexus block or periarticular injection. In a recent series of 54 patients with chronic shoulder disability carefully studied for local point tenderness and emotional background, treatment abolished pain and restored 75 to 100 per cent function in 78 per cent of the patients, most of whom were discharged within eight weeks. When those patients with severe neurotic manifestations are excluded, the satisfactory results are further increased.

The symptoms of chronic periarthritis develop in some middle-aged or elderly individuals with hemiplegia, coronary arterial insufficiency, myocardial infarction, Parkinson's syndrome, and other inactivating conditions. Occasionally, a prolonged shoulder disability is due to conversion hysteria. Many mild or moderately "painful" and refractory stiff shoulders are of psychogenic origin. The history of an injury or the occurrence of a calcified

deposit in the x-ray film usually leads to the diagnosis of periartthritis or a calcific disability. We have found the presence of wide-spread skin

hyperesthesia, the response to consecutive infiltration of saline and procaine, and a detailed personal history invaluable clues to these cases.

## NEW YORK ACADEMY OF MEDICINE PRESENTS AFTERNOON LECTURES

The Friday Afternoon Lecture Series for 1944-1945 will be held at 4:30 o'clock at the New York Academy of Medicine. The program will be as follows:

November 3—"Recent Advances in Drug Therapy," by Dr. James A. Shannon, associate professor of medicine, New York University College of Medicine

November 10—"War Fractures," by Lt. Col. T. C. Thompson, (MC), AUS, Chief of Orthopaedic and Amputation Sections, Walter Reed General Hospital, Washington, D. C.

November 17—"Newer Concepts of Bronchial Asthma and Treatment," by Dr. Joseph Harkavy, associate physician, Mount Sinai Hospital

December 1—"The Problem of Infection in Burns," by Dr. Frank L. McLeney, associate professor of clinical surgery, College of Physicians and Surgeons, Columbia University

Dr. . . . . . Ab-

Dr. . . . . . and  
Course of Essential Hypertension," by Dr. Arthur M. Fishberg, associate physician, Mount Sinai Hospital

January 5—"The Therapy of Liver Diseases," by Dr. Charles L. Hoagland, physician, the Hospital of the Rockefeller Institute for Medical Research

January 12—"Present Trends in the Treatment of Pulmonary Tuberculosis," by Dr. H. McLeod Riggins, associate in medicine, College of Physicians and Surgeons, Columbia University

January 19—"The Modern Concept of Rheumatic Fever," by Dr. Robert F. Watson, the Hospital of the Rockefeller Institute for Medical Research

January 26—"The Problem of Alcoholism," by Dr. Howard W. Haggard, Director, Laboratory of Applied Physiology, Yale University

February 2—"The L. Duncan Bulkley Lecture: "Hormone Therapy and Human Mammary Cancer," by Dr. Fred W. Stewart, pathologist, Memorial Hospital

February 9—"Specific Remedies in the Prevention and Treatment of the Exanthemata," by Dr. Philip M. Stimson, physician, Willard Parker Hospital

February 16—"Shock Treatment of Psychoses," by Dr. Nolan D. C. Lewis, Director, New York State Psychiatric Institute

March 2—"The Hormonal Treatment of Prostatic Malignancy," by Dr. Clyde Leroy Deming, clinical professor of urology, Yale University School of Medicine

March 9—"Pathogenesis, Diagnosis, and Treatment of Anemia of the Newborn," by Dr. Peter Vogel, Adjunct Physician for Hematology, Mount Sinai Hospital

March 16—"Recent Advances in Laboratory Procedure," by Dr. N. Rosenthal, associate physician and hematologist, Mount Sinai Hospital

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April 6—  
Dr. A. . . . .  
of dermatology, College of Physicians and Surgeons, Columbia University

April 13—  
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April 20—"Indications and Contraindications for Caudal Analgesia," by Dr. Clifford B. Lull, clinical professor of obstetrics, Jefferson Medical College

## DIRECTORY OF AFFILIATED CARDIAC CLINICS PUBLISHED

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which have met the standard requirements of the New York Heart Association and of the New York Tuberculosis and Health Association. There are sixty-seven such clinics located in New York City, thirty-six in Manhattan, seven in the Bronx, seventeen in Brooklyn, and seven in Queens.

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These are: the convalescent Home of the Burke Foundation in White Plains, Irvington House at Irvington-on-Hudson, Pelham Home for Children at Pelham Manor, St. Francis Sanatorium for Cardiac Children in Roslyn, Long Island, and the Speedwell Society at 446 East 88th Street, New York City.

# TREATMENT OF POLIOMYELITIS

IRVING J. SANDS, M.D., Brooklyn

IN ORDER to discuss the treatment of poliomyelitis intelligently, it is opportune to review certain fundamental etiologic and pathologic facts regarding this disease. Poliomyelitis is an acute infectious disease that is caused by the invasion of the nervous system by a filtrable virus.<sup>1,2</sup> This virus is one of the smallest of the filtrable viruses that can be passed through the finest filters and membranes, that is resistant to phenol and ether, and that is most readily dissolved by oxidizing agents such as hydrogen peroxide and potassium permanganate and by ultraviolet rays, and by heating to a temperature of 55 C. for as short a time as five minutes. The virus has been found in human stools and in sewage.<sup>3</sup> This virus is highly neuronotropic in its tissue affinity.<sup>4</sup> Furthermore, it has been shown that there are apparently several types of poliomyelitis viruses, so that the serum of a monkey convalescent from one type will not protect the monkey against a different strain. This may account for second attacks of poliomyelitis.<sup>5</sup> Experiments have indicated that the most likely portal of entry in the human is the tonsillar-pharyngeal region, and also the gastrointestinal tract,<sup>4</sup> most probably by way of the mouth. The virus reaches the nervous system by the regional cranial or peripheral nerves. It travels along the axones, reaching the nerve cells proper. It is striking that as soon as it reaches the central nervous system it is localized in the motor cortex of the brain, the diencephalon, the mesencephalon, the medulla, the pons, and the spinal cord, the motor cells being the ones invariably involved.<sup>6</sup>

Poliomyelitis, therefore, is anatomically a meningoencephalomyelitis<sup>7</sup> with the motor nerve cells being primarily involved, and those of the anterior horn cells of the gray matter of the cord and of the cranial nerves of the pons and medulla bearing the brunt of the lesion. Not all of the nerve cells invaded by the virus are completely destroyed, and reversible changes may occur.<sup>6</sup> Since the pathologic process is confined to the central nervous system, the disease is primarily a neurologic disorder.

## Pathology

The brain is swollen and edematous and there is marked congestion of the pia, especially at the base, and particularly about the pons and medulla. The spinal cord is edematous and con-

gested and its vessels, particularly on the anterior surface, are swollen and engorged with blood. Section of the cord and the medulla will disclose marked hyperemia of the gray matter, especially of the anterior horns. Microscopic section discloses both mesodermic and ectodermic changes. The pia is edematous, congested, shows proliferation of the fibrous tissue, and is infiltrated with polymorphonuclear leukocytes, lymphocytes, and numerous red blood cells. The blood vessels show hyperplasia of their endothelial linings and will show infiltration of the Virchow-Robin lymphatic spaces with polymorphonuclear leukocytes, lymphocytes, and plasma cells. Small hemorrhagic areas are only rarely encountered. The ectodermic changes involve both the neurons and the neuroglia. The motor cells show cloudy swelling, chromatolysis, neuronophagia, and vacuole degeneration. In the early stage of the disease the nerve cells may show neuronophagia by polymorphonuclear leukocytes,<sup>6</sup> but after a few days the neuroglial element predominates. In a week or so, one may find areas in the anterior horns where there has occurred complete disappearance of nerve cells which have been replaced by polymorphonuclear leukocytes, lymphocytes, and microglial and neuroglial elements.

## Clinical Types

While the disease, anatomically, is a diffuse meningoencephalomyelitis with the myelitic and bulbar elements predominating, the clinical types present themselves in the following forms:

1. *Abortive Type*.—This is characterized by an acute and mild febrile disorder, occurring during epidemics, and showing no signs referable to involvement of the nervous system. A diagnosis is made only by implication.

2. *Meningeal Type*.—This is characterized essentially by signs of meningeal irritation, with rigidity of the neck, slight spinal tenderness, and rarely tremor.

3. *Bulbar Type*.—This type is characterized by symptoms referable to involvement of the seventh, ninth, tenth, and eleventh cranial nerves. The vestibular mechanism may also be involved in this particular type.

4. *Myelitic Type*.—This is characterized by paresis and paralysis of the skeletal and limb muscles, and of the diaphragm.

5. *Bulbomyelitic Type*.—This type is characterized by clinical signs referable to lesions

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of the cranial as well as the peripheral motor nerves.

*G. Encephalitic Type.*—This is a rare form, generally complicates the bulbomyelitic type, and is characterized by extreme drowsiness, stupor, aphasia, sphincteric disturbances, and even convulsions.

A diagnosis is made on the history of the onset of the illness, the physical examination, and the spinal fluid study. The onset is generally sudden, with fever, headache, vomiting, and constipation associated with restlessness, irritability, and insomnia or, more commonly, somnolence. The patient appears apprehensive, anxious, and resents examination. The face is flushed, the pulse is rapid, and the patient appears prostrate. Nuchal rigidity and mild Kernig signs are generally present. The temperature is between 101 and 103 F., usually only about 102. The blood count is between 10,000 and 15,000 white blood cells, with a polymorphonuclear cell count of 45 to 60, there being an absolute and relative lymphocytosis. The fever may continue for three to five days and then subside. In the myelitic type there ensues, in a day or two after the onset of the illness, weakness or paralysis of muscles in the limbs, abdomen, thorax, or diaphragm. In the bulbar type<sup>8</sup> there is involvement of the cranial nerves, the seventh, ninth, tenth, and eleventh being the ones principally involved.

The bulbar<sup>8</sup> group may into two types include:

1. Unilateral, in which there is unilateral paralysis of the palate with congestion of the pharyngeal wall fauces and mucous membranes, lagging of one side of the palate, and a slight nasal twang to the voice, difficulty in swallowing for a day or two, and weakness in coughing. The fever in this group generally subsides in five to ten days and recovery usually ensues.

2. Bilateral, in which there is bilateral paralysis of the palate with increased nausea and salivation, uniform congestion of the oral cavity, collections of mucus behind the posterior pillars, labored respirations without supra- or infra-sternal restriction, nasal voice, indistinct articulation, marked difficulty in swallowing, especially of fluids, and with a very slow recovery and persistence of signs for many weeks.

If the temperature in these cases is down for forty-eight hours, no extension of paralysis has been observed. Involvement of the vasomotor center in this group invariably proves fatal. In the encephalitic form, the fever may persist for three or four weeks, ranging between 101 and 103 F., and then there is a gradual recovery; however, I have seen the temperature rise within three to four days after the onset of the illness, and death may occur within a few days.

The spinal fluid comes out under increased pressure, usually 150 to 250 mm. of water. The cell count varies from 50 to several hundred; in the myelitic form, usually from 50 to 200 cells, in the bulbar type from 50 to 75 cells, and in the meningeal type from 100 to 600 cells. It is my experience that the spinal fluid cytology within the first day or two after the onset of the illness is predominantly one of a polymorphonuclear increase; however, after the second day there is a relative lymphocytic increase. This follows very closely the type of cell encountered in experimental poliomyelitis.<sup>6</sup> At the onset of the illness, the total protein content in the spinal fluid is usually between 65 mg. per cent and 85 mg. per cent, generally averaging 75 mg. per cent, but it may be as low as 35 mg. per cent and as high as 120 mg. per cent. However, in the succeeding weeks, it rises gradually to about 250 mg. per cent and even to over 300 mg. per cent. It is always higher in the encephalitic types.

### Treatment

There are but few diseases that are accompanied by such universal anxiety and emotional tension as poliomyelitis.<sup>9</sup> There are few diseases in which so many contradictory forms of therapy have been advocated. For the past three years the therapy of poliomyelitis has been receiving increased attention because of the introduction of the so-called Kenny method of treatment.<sup>10</sup> When working with these patients she noticed there was an involuntary shortening of certain muscles of the body brought about by involuntary painful, spasmodic contractions. It was her opinion that this muscle was sick and needed nursing and it was her first objective to get rid of this painful condition and to allow relaxation to occur. After trying various means of alleviating these painful contractions, she finally arrived at the method of applying light woolen material wrung out of boiling water with a light protective material on top of that. She then noticed that the muscle, pulled out from its normal resting length, had forgotten how to contract and she therefore tried to convert the mind to the tendon of this "alienated muscle." She also observed that there occurred an interruption in the normal flow of impulses and that the impulses ran riot, as it were. "Thus were the symptoms—spasms, alienation, and incoordination—in this disease known as infantile paralysis, discovered thirty years ago" by her. Kenny regards muscle spasm as the most damaging symptom in poliomyelitis, and the muscles opposed to those in "spasm" become "alienated," or divorced from the patient's mind. In her conception, the "muscles in spasm" are the damaged ones. The Kenny treatment as well as her con-

ception of the pathologic process of the disease received a most unusually favorable response, not only from the lay public but from many of the leaders in the medical profession.<sup>11-13</sup> In certain medical quarters it was regarded as heresy to question her method of treatment or her explanation of the underlying pathologic and physiologic processes.

It soon became quite apparent that the Kenny conception of the pathology and dysfunction occurring in poliomyelitis was quite at variance with the usual orthodox understanding of the pathologic process of this disease. One observer spoke of Kenny's method "as the newest and the most popular fad."<sup>14</sup> Moldaver,<sup>15</sup> employing chronaxia and electromyographic studies, flatly controverted the Kenny findings, and he concluded as follows:

1. "'Muscle spasm' is not 'the most damaging symptom' and does not lead to neuromuscular degeneration. 'Spasm' is not an entity, but a complex phenomenon. It is the result of a combination of the normal stretch reflex, meningeal irritation of the posterior roots, increase of the normal tonus in healthy and strong muscles or muscular fibers opposed to weak or paralyzed muscles, lesions of dorsal root ganglions and posterior horns. Pain is a common symptom in acute poliomyelitis. This is a referred pain which is increased by stretching of the muscles.

2. "In 'alienated muscles' there is neither a functional paralysis nor a 'physiologic block.' That these muscles have partially or completely lost their power to contract is due to the fact that the anterior horn cells are damaged or destroyed. In the paralytic or paretic muscles considered to be 'alienated,' there is always some degree of neuromuscular degeneration.

3. "'Incoordination' does not consist in a misdirection of nerve impulses. It is caused, if at all, by the inability of partially or totally denervated muscles to respond to otherwise normal nerve impulses."

Watkins, Brazier, and Schwab,<sup>16</sup> as a result of their electromyographic studies, likewise disagreed with the Kenny concept of the pathologic process in poliomyelitis. They summarized their findings as follows:

1. "In poliomyelitis the term 'muscle spasm' is inadequate to describe the complexity of dysfunction which is revealed by electromyography.

2. "In the acute stage, only muscles with some degree of paralysis discharge electric potentials at rest; these electric abnormalities are not correlated with the presence of clinical 'spasm.'

3. "Partially paralyzed muscles are hyperirritable to passive stretching, as indicated by electric discharges and pain; the muscle tension thus developed appears to be a reflex protective mechanism.

4. "The electric activity in paretic muscles at rest increases during the period of improving motor power, and the pattern of discharges corresponds with that seen in muscles during regeneration of peripheral nerves. When improvement in motor power ceases, spontaneous electric discharges disappear.

5. "No abnormal electric activity is associated with the muscle contractures of the late stage of poliomyelitis, nor are any discharges present in completely paralyzed muscles.

6. "The concept of 'mental alienation' does not contribute to the explanation of paresis in our cases, since objective signs of a disease process were always present in the paretic antagonists of muscles in 'spasm.'

7. "Increase of voltage of action potentials during successive ergographic tests is an index of recovery of motor power.

8. "Of the three concepts of Kenny, the only one upheld by our objective measurements is that of 'incoordination,' although the term is misleading. We demonstrated not only simultaneous activation of protagonists and antagonists but also intermittent synchrony of individual discharges from opposing muscles, such as is found in peripheral nerve injuries during regeneration of axons. Disordered reciprocal innervation seems to be a more descriptive term for this type of dysfunction."

Commenting upon the situation, Cobb<sup>17</sup> said: "Thus it is being demonstrated once more in the history of medicine that new and empiric methods of treatment, backed by uncritical enthusiasm, may produce many cures but much physiologic nonsense. The treatment may be good but the ex post facto rationalizations of the therapist are usually bad."

Since 1916 I have had the opportunity of observing poliomyelitis patients in various neurologic centers, general hospitals, and, for the past fifteen years, at the Kingston Avenue Hospital for Contagious Diseases, which serves a population of approximately three million people. I have performed autopsies on several patients who have died from this disorder. I have observed the different forms of therapy applied during a period of over a quarter of a century. I have attended a clinic held by Sister Kenny, and I have also witnessed the demonstration of the application of the treatment at the 1942 convention of the American Medical Association in Atlantic City. I have observed and followed the "Kenny Treatment" as given in the Kingston Avenue Hospital for the past eighteen months. It is readily acknowledged that Sister Kenny is an excellent physiotherapist who has profound knowledge of the functions of muscles, and who is a persevering worker. I have become convinced that the application of fomentations as prescribed by her relieves pain and makes the patient comfortable. Credit is due to her for stimulating

the medical profession to the institution of active treatment in the acute phase of the illness.

Poliomyelitis is a disease that attacks primarily the motor apparatus of the nervous system, especially the anterior horn cells of the gray matter of the spinal cord, but lesions are also found in the posterior horns, in the sympathetic column, and in the dorsal root ganglia. The motor cerebral cortex, the thalamus, the pons and medulla, and the cerebellar nuclei are also involved. Some cells are completely destroyed, others are partially damaged and in some the process is indeed a reversible one. In the early stage of the disease there is marked meningeal irritation, and this, plus the involvement of the dorsal root ganglia, the posterior roots, and posterior horns, accounts for the pain that is so prevalent in the early stage of the disease. The paralysis is a flaccid one. Tenderness on pressure of the muscles and pain caused by active and passive motion of the limbs are common findings. Baking, massage, muscle training, and some form of immobilization seemed to have been the therapy a quarter of a century ago.<sup>18</sup> Some advocated keeping the children in bed at least one year, others for a still longer period of time. Some advocated immediate treatment, particularly application of heat in the acute phase. Warm water pools and electric therapy were advocated by others. I agree with McCarroll,<sup>14</sup> who said: "Our knowledge of the pathology of poliomyelitis, long recognized and often proved, should not permit us to accept and sanction unquestionably any treatment which in reality amounts to nothing more than tinkering with the peripheral secondary change in the muscles themselves."

The treatment of poliomyelitis is purely symptomatic and palliative. The patient should be removed to a hospital equipped for the treatment of poliomyelitis cases. The vast majority of the patients, particularly those who have only the meningeal form, will get well at the end of two or three weeks without any particular form of therapy and without any residual effects. However, there are certain specific symptoms that require actual and symptomatic care. The relief of pain is best accomplished by artificial heat. It matters very little whether it is given in the form of a cradle lined with tungsten lights (infrared) as advocated by Toomey<sup>19</sup> or by hot fomentations as taught by Kenny. The fact of the matter is that the patients feel more comfortable and lose a good deal of their anxiety when heat is applied. The bowels require care. A saline cathartic such as 2 oz. of a 50 per cent solution of magnesium sulfate daily for the first two days and a daily soap-suds enema will be desirable. The saline cathartic has the additional benefit

of reducing edema of the central nervous system. Occasionally abdominal distress is caused by gas being pocketed in the intestines that have become segmentally parietic. A rectal tube or a soap-suds enema frequently relieves that pain. Paralysis of the bladder is not common. It may be encountered in those patients in whom there is involvement of the lumbosacral segment of the cord or of the autonomic nervous system with weakness of the detrusor urinary muscle and of the internal sphincter muscle. Catheterization may have to be employed, and caution should be taken to prevent infection of the bladder. The restriction of fluid to approximately 1,500 cc. in twenty-four hours has been accepted as a universal procedure. The diet should be soft and semisolid for the first few days, but of adequate caloric and vitamin content. When one considers the disease process in the light of the underlying pathologic and anatomic changes, it becomes apparent that some of the muscle weakness which clears up even without any treatment is due to the edema of the cord and the rest of the nervous system. Hence, 50 cc. of a 50 per cent solution of glucose should be given twice daily for the first three or four days of the acute phase of the illness.

Regarding the care of the muscles that are parietic or even paralyzed, the following facts must be taken into consideration. The disease is of the nervous system, and not of the muscle itself. The changes in some of the nerve cells are reversible, in others they are permanent and lead to the death of the cells. If a muscle or a group of muscles is deprived of all of the nerve cells supplying it, these muscles are bound to atrophy, regardless of whatever method of therapy is applied. However, in the majority of instances, even in the most serious cases, there are some nerve cells left and it is for this reason that subsequent physiotherapy may result in functional recovery of many parietic and even paralyzed muscles. Twenty-five years ago Feiss<sup>20</sup> advocated early active treatment of poliomyelitis. He took a strong stand against the recommendation of the Harvard Infantile Paralysis Commission,<sup>21</sup> which recommended prolonged rest and fixation. He insisted the passive and active movements of the muscles should be instituted even in the acute phase of the illness. Such procedure has given good results in the hands of many. Stiffness of the antagonistic nonparalyzed muscles is due to the hypertonicity resulting from factors mentioned in the early part of the paper. Hence, gentle massage and manipulation of the limbs are helpful not only for the paralyzed but also for the antagonistic normal muscles. Sandbags, splints, and even braces must be used to prevent stretching of the par-

alyzed or paretic muscles. When the acute phase is over, persistent passive and active motion, electrotherapy, underwater exercises, and calisthenics should be employed and should be kept up until the muscle has resumed nearly as normal a function as it had prior to the onset of the illness. It is to Kenny's credit that she has once again aroused the interest of doctors in intelligent physiotherapy. However, let me re-emphasize that there is nothing in her methods and procedure, except for finer points, that has not been employed by physicians as far back as the 1916 epidemic. Moreover, no one has a monopoly on the intelligent application of physiotherapy. I have met several intelligent and well-trained physiotherapists right in our own country and in our own city, who have worked quietly and efficiently and persevered until they have restored the paralyzed poliomyelitic limbs to nearly as normal a state as could possibly be expected in the light of the underlying pathologic process.

Flail-like muscles are not now encountered as commonly as they were a quarter of a century ago. When this condition occurs, it is the result of destruction of all the anterior horn cells supplying all the muscles to these limbs. Even in these cases, if early and persevering treatment is instituted, improvement may ensue. It must be remembered that all active and passive movements should not go beyond the point of fatigue.

The question of serum therapy is not, as yet, a settled one. It may no longer be said that if a virus invades the nerve cell the cell will invariably die. It has been pointed out that many of the nerve changes are reversible ones.<sup>6</sup> Furthermore, it sometimes takes as long as three to four days before paralysis ensues. Toomey<sup>22</sup> claims that the disease can be prevented in animals protected with convalescent serum when the disease is given via the gastrointestinal tract. In the human being the virus probably enters through the mouth and gastrointestinal tract and it takes time for it to reach the nerve cells proper. Hence, the problem of neutralization of the virus by employing convalescent blood serum<sup>23</sup> or even transfusions<sup>24</sup> should be once again opened up and given a real scientific trial.

The bulbar type of poliomyelitis<sup>8</sup> requires special skill in its management. The patient should be put in the prone position upon a hard mattress and the foot of the bed elevated to insure drainage. The accumulation of mucus in the back of the throat should be removed by swabbing, or preferably by suction. It is imperative that these patients receive fluids either by rectum, by vein, or by hypodermoclysis. Hypertonic glucose, intravenously, serves the double purpose of furnishing nourishment and fluids and reducing edema. Nasal gavage should

not be begun till the temperature has subsided, and then only in small amounts, to obviate vomiting.

Respiratory disturbance is the most serious complication that is encountered in this disease. It may be due to (1) collection of mucus in the back of the throat caused by pharyngeal paralysis; (2) paralysis of the respiratory nucleus in the medulla; and (3) paralysis of the diaphragm and the intercostal muscles. When respiratory difficulty ensues, the child becomes markedly apprehensive, is very restless, and tosses about in bed, throwing his limbs about in a haphazard manner. He shows a peculiar, hacking, respiratory grunt, and tugs at the muscles of the front of the throat. He jerks his head about violently. There is dilatation of the alae nasi. There may be slight cyanosis of the lips and face.

The respirator should be used for patients who show diaphragmatic or intercostal muscle paralysis. It should not be used when respiratory embarrassment is caused by involvement of the medulla.

In the acute stage of the illness there are very few drugs that have any real value. Physiotherapy itself allays the anxiety and mental apprehension. Saline cathartics are necessary. It seems to me that the use of Vitamin E and Vitamin B complex in the acute phases of the disease may be well worth trying, for these drugs have a direct and specific action upon the nervous system. Those<sup>25</sup> who have used it believe that they have found it very helpful. After the acute phase is over, persistent physiotherapy in the nature of massage, passive and active movements, electrotherapy, particularly interrupted galvanic and sinusoidal current, and re-education should be employed for months and years until the paretic or paralyzed muscle has regained its fullest possible functional capacity. After this, orthopaedic appliances and surgical measures employed by a competent orthopaedist will help many to regain some functional usefulness of the paralyzed limbs. In the acute phase of the encephalitic form, forced spinal-fluid drainage should be employed.

### Prophylaxis

A word about prophylactic measures may not be amiss at this moment. A decade ago, a wave of nose-spraying of thousands of children with chemical agents such as zinc sulfate and picric acid followed the discovery that these substances had prevented nasal infections in one type of monkey. However, its failure to protect human beings is explained by the fact that the olfactory pathway is not the one by which the virus enters humans. Vaccinations<sup>26</sup> and injections of convalescent serum likewise proved disappointing.

General hygienic measures were also found wanting, because poliomyelitis attacks the most healthy and the most virile people. Nevertheless, there are many who still maintain that injections of convalescent serum<sup>22, 24</sup> may be used during epidemics as a possible preventive agent. Recently Sabin,<sup>27</sup> in his Béla Schick Lecture, has cast a ray of hope by calling attention to the following facts, namely, the presence of the virus in human stools, in sewage, and in flies which have been trapped in epidemic areas. Furthermore, the disease occurs during the summer months. He, therefore, pointed to the likelihood of the virus' being carried by flies through food to human beings. Possibly public health measures to eliminate the menace of flies may be the solution to the problem of prevention of poliomyelitis. Rigid quarantine, closing of schools or of summer camps in which cases of poliomyelitis have occurred, and delayed opening of schools during epidemics, are measures that should be condemned, for they are not based upon scientific facts and tend only to create panic.

### Summary

1 Poliomyelitis is a disease caused by a specific virus which enters the human being through the mouth and the alimentary canal. The virus is found in the central nervous system, in the walls of the alimentary canal, in stools, and in sewage.

2 The virus travels along the axones and edges in the motor cortex of the brain, the diencephalon, the mesencephalon, the medulla, and the anterior horn cells of the spinal cord. The cells of the motor apparatus are the ones that are involved in the pathologic process. Poliomyelitis is, therefore, a neurologic disease.

3 Clinical poliomyelitis may be classified according to the predominant signs into (1) abortive type, (2) meningeal type, (3) myelitic type, (4) bulbar type, (5) bulbomyelitic type, and (6) encephalitic type.

4 The treatment of poliomyelitis is symptomatic and palliative, heat, gentle massage, and early passive manipulations should be employed even in the acute phase of the illness. Convalescent serum is still useful.

5 Persistent physiotherapy for months and years must be employed to overcome paralysis that may follow.

6 Possible effective prophylactic measures are discussed.

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Saul Schapiro and staff, and "Urology," by Drs. Fedor Senger and John J. Bottone



# PROBLEMS IN THE POSTOPERATIVE CARE OF CANCER PATIENTS

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A CHRONIC disease as widely prevalent as cancer and in which about 75 per cent of the patients die within four years of the time a diagnosis is made presents an enormous problem in terminal care. Pertinent questions with regard to terminal care are: What constitutes adequate care? What patients require hospitalization during this period? What facilities are available? Outside of New York City only about 35 per cent of the cancer deaths occur in institutions. Altogether, about 2.5 per cent of the total admissions to general hospitals are for malignant disease. Cancer, however, is a much more serious factor in the nation's health than this percentage indicates. The present development of special cancer facilities has not yet influenced favorably either the morbidity or the mortality from this disease.

The tabulation of cancer mortality in New York State during 1943, as prepared by the Department of Health,<sup>1</sup> listed cancer deaths of all forms to be 22,400. In 1942 the annual prevalence rate was 579 cases per 100,000 population. This is 3.6 times the mortality rate, according to Levin.<sup>2</sup> He likewise recalls that usually an estimate of cancer prevalence is based on a ratio of 3 cases per death and that, because of the incompleteness of morbidity reporting, these figures for New York State indicate too low a ratio. The prevalence may be four or five times as great as the mortality.<sup>3</sup> Taking the latter as a more likely figure, this would mean that there are about 112,000 persons with diagnosed cancer in the State. Depending on the site of the cancer, perhaps 30 per cent are free of disease. What about the remainder—78,400? This number represents a large group requiring specialized medical attention either in institutions or in the home. The facilities in this State for the institutional care of patients in the terminal stages of the disease appear inadequate. Their problems are, therefore, the problem of the practitioner who ministers to them in their homes.

More unpleasant than telling the patient or his family that cancer exists is the duty of informing the relatives that the disease has reached an unfavorable or even incurable stage. This is often the delicate duty of the general practitioner. He has had the patient returned to him following treatment by surgery or radiation therapy, and it becomes his unhappy task to discover recurrence

or metastases. It is then his job to take over from the specialist. It is to this group, the family physicians, that these remarks on the care of the patient with terminal cancer are addressed.

In approaching the problem of caring for patients with incurable cancer, we have to deal with a disturbed mental state. Two important questions arise—one is whether a patient should be told he has cancer, and the other is the question of ultimate prognosis. It seems certain that it is better for the physician to avoid telling the patient the nature of his disease—especially never to be the first to use the word "cancer," which has so many sinister connotations in the lay mind. The question: "Is it cancer?" is sure to be asked by the patient or his family or friends and many patients who will ask to be told the worst are least fitted to know it.

Regarding the second question: When a patient knows he has cancer, it seems most desirable to hold out the hope of recovery even to the last. The difference in the mental outlook of a man who believes his condition to be absolutely hopeless from that of a patient who believes that he has even a 1-in-1,000 chance of recovery is enormous. Even against such hopeless odds one may most infrequently expect spontaneous regression and even disappearance of an advanced cancer. It is quite possible that such regression has made the reputation of certain "constitutional" cancer cures.

But in all cases where there is no doubt as to the diagnosis, a doctor, for the sake of his own reputation, should tell some relative or friend of the patient what the nature of the disease is.

In all cases the close cooperation of the specialist with the general practitioner is indicated, not only in the active treatment of the patient, but where cure has not resulted. If the specialist and the family physician keep each other advised, each will accomplish his part of the work to the better advantage of the patient and the family. Wherever the patient is located during the terminal stages, his last days may be made much more comfortable by both intelligent care and medication as well as by optimistic psychotherapy. Never tell a patient suffering from cancer, or his friends, that there is nothing to be done; so long as life lasts there is help to be given, and there are few forms of the disease in which the doctor can earn more gratitude than he can by his management of a case of inoperable cancer.

Many physicians feel that the easiest way to treat the incurable cancer patient is to administer large doses of hypnotics or narcotics, and this is

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often done indiscriminately. They reason that the end is inevitable and that if the patient is kept continuously under the effect of a drug, he is comfortable and the anxiety of his relatives is relieved. Since no one can tell how long the terminal phase of the disease will last, this attitude is deplorable. Even with the cautious administration of opiates, increased dosage often has to be resorted to so that huge amounts must be used. Neither a patient nor his relatives should judge the quantity of a drug, nor the time interval which should elapse between doses.

### Euthanasia

It has been felt by many members of the profession that once the terminal stage of cancer has been reached narcotics in large doses should be indiscriminately administered. But, since the life of the incurable cancer patient is usually of long duration, sedatives, hypnotics, and analgesics should be used with utmost caution.

"Euthanasia" literally means a gentle death of little suffering. Since the subject is not taught in any of our medical schools, the physician enters practice having to learn for himself what to do and what not to do in the most solemn and delicate position in which he can be placed—in attendance on the dying. It is for him to administer the resources of the medical art in aid of an easy, gentle, and placid death.

The word "euthanasia" refers to two things: first, the practice of painlessly putting to death those suffering from distressing symptoms as an act of mercy, and, second, the practice of relieving suffering so that the going-out of life may take place with as little distress and pain as possible. These are such totally different aspects that each should be considered separately.

The State has never sanctioned the first, and the physician is not given the right by any diploma he possesses to administer a drug to cause death. It is probable that even if it were permitted the majority of doctors would refuse to carry it out, since they enter their profession to maintain and prolong life, and not to take it.

Euthanasia is a matter of interest to all, for death sometimes comes very slowly, and delay may be tragic to the patient and those around him. A physician is permitted to give drugs to relieve pain and suffering so that life may go on with as little disturbance as possible and death may take place briefly. He may give as much medicine as he thinks a particular patient needs, provided the aim is to relieve symptoms. He must be guided by what is in the interest of the patient. It must not be assumed that the administration of drugs to relieve suffering necessarily hastens the end, for if the pain persists it will soon undermine the health, and even if a

drug has a depressing action, its harmfulness may be more than counterbalanced by the serious effect of the prolonged suffering and pain which it is given to relieve. Up to the present the State has entrusted to the medical profession a

laws that limit their power.

Good nursing and the due administration of light food and stimulants comprise all that is needed. The approaches to death are so gentle and the act of dying so easy that Nature herself provides a perfect euthanasia.

### Nursing Care

Sympathetic, efficient nursing care, when possible, is a great factor in caring for patients with incurable cancer. A cheerful attendant may be of inestimable value at this stage of the disease. The meticulous care of the patient, judicious medication, and frequent, gentle surgical dressings, when necessary, are not only prerequisites for comfort but may prevent the isolation of the individual. Friends and relatives are reluctant to remain in the room when the patient is uncomfortable or there is a noticeable odor, caused by either poor personal hygiene or the discharge from affected areas.

Frequent dressings diminish secondary infection and lessen the absorption of tumor toxins. These toxic products, when absorbed, add to the anemia usually present during the terminal stage of cancer. A nurse can arrange more comfortable positions for the patient, not only helping to make conditions more bearable but preventing the development of pressure sores. Cachexia may be obviated by carefully selecting the diet and giving frequent, easily assimilated nourishment with the addition of suitable vitamins.

### Chemotherapy

Mention should be made of certain clinical experiments which have been made in testing the use of heptylaldehyde bisulfite (sodium alpha-hydroxy heptane sulfonate) for the treatment of metastatic mammary cancer to bone. At the Memorial Hospital, under the direction of Rhoads,<sup>4</sup> and with the cooperation of the Breast Department, the work of Strong<sup>5</sup> on laboratory animals has been tested on humans. Those patients with definite roentgenographic evidence of disease who have elevated blood calcium and phosphatase levels have been treated. Eleven patients received a daily oral dose of the drug varying from 1 to 12 Gm. for from twenty to twenty three days. Three patients received the compound by continuous intravenous drip, a dose of 0.50 Gm. per Kg. of body weight per day. The

two modes of administration did not alter the expected course of the disease. Nor did any clinical regression parallel the laboratory experiments.

It has been reported that several types of cancers contain abnormally high amounts of biotin.<sup>6</sup> It has also been noted that the addition of biotin to diets which prevented in rats the development of hepatomas induced by feeding butter yellow<sup>7</sup> broke down the protection these diets afforded. These findings do not necessarily imply that biotin is required for the initiation or growth of a neoplasm, but may suggest that if biotin is withheld from cancer patients their neoplasms might be decreased. The existence in egg-white of a protein, avidin, which forms a complex with biotin has been known for several years. Administering it orally to rats induces a deficiency by preventing an absorption of biotin from the gastrointestinal tract. For these reasons Rhoads and Abels<sup>8</sup> fed two patients with malignant lesions for thirty weeks with sixteen to forty times the amounts of avidin necessary to bind *in vitro* the limited amounts of biotin in their diets. There was no evidence that a biotin deficiency had been induced nor were the amounts of biotin excreted in their urine abnormally low. Likewise, the clinical course of these patients was in no way

changed. It is our opinion that to date there is no conclusive agent which has been advised for the treatment of cancer inoperable cancer that is of intrinsic value. completeness of morb.

New York State issues

prevalence may be often does exist in conjunction with the mortality.<sup>9</sup> Taking these disorders. Heart and kidney disease, syphilis, and tuberculosis figure, this would mean that 112,000 persons with cancer as adequately, if not more so. Depending on the cancer as at any other time. Perhaps 30 per cent are free from immediate problems incident to the disease. Therapeutic measures that require a large group require the patient's attention either in institution or should be resorted to. The facilities in this State as to the relative value of care of patients in the hospital and intravenous drugs for ease appear inadequate reserve and stimulating apparatus. Therefore, the problem. There are numerous types of ministers to them in institutions that are satisfactory for oral

More unpleasant Intramuscular and intravenous family that cancer and arsenic are even more the relatives than stimulation of the entire body by favorable or ultraviolet light will help in supporting the delicate patient's general physical condition. has had the transfusions of small amounts of whole treatment by stated for their tonic and therapeutic becomes his

suffering from incurable cancer is

Read at the Annual Meeting of the State of New York, 1934, as from the actual therapy Associate Surgeon, Tumor Clinic, Meadowbrook

employed. While many of the measures resorted to may from the outset be doomed to failure, nevertheless the patient is encouraged psychologically if these are carried out. Whether the benefit is physical or mental, any results obtained would justify the means.

While it may be premature to accept in entirety the claims made for the administration of vitamins, we have been impressed with the favorable results. In treating patients with incurable cancer, vitamin B complex, vitamins B<sub>1</sub>, and C seem to have a definite sphere for their administration, as well as vitamins A and D. The diets of these patients are vitamin-deficient because: (1) the amount of food taken is small; (2) the diet is frequently liquid in character; and (3) the diet lacks balance.

Special modified diets should be outlined, the nature and location of the cancer determining the form. Patients with intraoral lesions require liquid or soft diets, permitting easier deglutition. The caloric content should be as high as possible because the pain caused by swallowing may limit the amount of food intake. The patient may increase his diet if, shortly before mealtime, the mouth and throat are sprayed with a weak cocaine solution. To avoid the use of cocaine, metycaine tablets of 1/2 grain each may be dissolved on the tongue. This local anesthetic has been found useful for this purpose and for diminishing the pain in ulcerating oral lesions. Euphagin and Nuporal lozenges are likewise of similar use.

Patients with carcinoma of the esophagus with gastrostomy must be maintained on a high-caloric liquid diet. Cooked cereals diluted with cream, to which large amounts of carbohydrates, preferably lactose, are added, may be given with little difficulty. Milk, with the addition of glucose or lactose, powdered milk, eggs, and creamed soups may be given. One should attempt to give a diet which will approximate 3,000 to 4,000 calories. Twelve ounces of the following formula given in six feedings will give approximately 3,000 calories:

1 teaspoon salt	1/2 cup lactose dissolved in
5 eggs	1/2 cup water
1 1/2 quarts milk	4 oz. strained spinach,
1 cup Klim	peas, or carrots
1/2 cup Karo	1 oz. salad oil

To this may be added:

4 oz. orange juice twice a day
3 drops vitamin A-D concentrate
3 teaspoons liver powder
1 tablespoon brewers' yeast

This mixture is not particularly palatable, but offers a concentrated diet, ample in calories, minerals, and vitamins. It may be used for nasal

feedings in intraoral cancer as well as for gastrostomy or jejunostomy administration.

When disease does not involve the gastrointestinal tract, a full maintenance diet should be given.

### Treatment of Nausea and Vomiting

Nausea, regurgitation, and vomiting may result from excessive nasal secretion, cough, headache, metastases to the skull or brain, gastritis, gastric or intestinal obstruction, or the absorption of toxins due to the breaking down of tumor tissue. It is evident that if certain of the organic conditions producing these symptoms cannot be eliminated, no amount of therapy will avail. However, proper elimination from the gastrointestinal tract, the insertion of a nasal tube, the frequent removal of excessive nasopharyngeal secretions, and the cleansing of necrotic wounds will always help the patient. Besides, a faulty diet, with low vitamin content, may produce these symptoms. If marked inanition is present, vitamins B<sub>1</sub> and C and liver concentrate should be administered hypodermically in full doses.

Absolute gastric rest is the single most important means of lessening the stream of afferent stimuli affecting the vomiting center. Rest should be obtained in a horizontal position or with the feet slightly elevated above the level of the head. The mouth should be kept moist. Fluids should be administered by other channels. An antiketogenic regimen should be instituted. A very useful formula which I have used and found of value is cerium oxalate, a 10-grain powder is given with 10 minims of dilute hydrochloric acid (through a drinking tube) as often as every four hours, if necessary. Teaspoonful doses of very hot or very cold or carbonated water, ginger ale, or champagne may be given every fifteen minutes. Brandy over cracked ice may be given and may prove useful when everything else has failed.

No matter how the vomiting originates, acidosis induced by the starvation it produces irritates the vomiting center in the medulla and maintains a tendency to nausea and vomiting even if the original cause has subsided. Here carbohydrate administration by intravenous drip is the chief remedy, even in the vomiting of the diabetic, in whom the carbohydrate administered should be "covered" by insulin. Alkalis are important in the presence of acidosis if much base has been lost.

### Care of Cutaneous Ulceration

The care of cutaneous ulcerations resulting from pathologic invasion of the skin by neoplastic extension, decubitus or the result of prolonged and intensive radiation therapy will often test the

resourcefulness of the practitioner. Certain medicaments may prove satisfactory for a time and then may seem to lose their efficacy. Besides, ulceration may be better controlled or healing may at times be affected if the formulas are changed frequently.

Ulcerating lesions should receive frequent, meticulous, surgical toilets, with neutral soap or any of the commercial naphtha soaps. Secondary infection plays a great role in increasing the local and general distress. When pain persists in spite of rigid antisepsis, additional measures must be undertaken for relief. Moist dressings of boric acid or potassium permanganate or azochloramid may be applied. Ointments are not as satisfactory, for they tend to seal in infection and prevent proper drainage. However, certain salves containing local anesthetics may be used.

One of the modes of treatment of skin ulceration, especially in the presence of macrobic bacteria, is the use of zinc peroxide. One must be certain that the preparation is active. The solution liberates oxygen for many hours and is an effective seal in preventing evaporation and drying.

Ulcers caused by irradiation effects on the body surface or pyogenic invasion when chronic, require the trial of many preparations to effect healing. Cod liver oil, high in vitamins A and D, is incorporated in an ointment base. The effect of applying such a salve is striking in the rapidity with which healing ensues.

Another preparation for the treatment of ulcers is Allantoin. It is a crystalline substance which stimulates healthy granulations and produces a medium apparently unfavorable to bacterial growth. Allantoin is used in 0.4 per cent aqueous solution on gauze.

A word of caution should be expressed concerning the use of sulfonamides incorporated in an ointment base. They may be applied to an uncomplicated skin ulceration. When radiation therapy has been employed and severe cutaneous reaction ensues, or when disease appears in an irradiated area, the sulfonamide seems to act as an irritant.

The skin often becomes ulcerated or macerated from the discharge of fungating cancers or fistulas from viscera. While zinc oxide ointment or linolin has been used in the past, we find an ointment containing powdered aluminum to be most efficacious. Its use is enthusiastically recommended.

### Physical and Therapeutic Castration to Control Inoperable Cancer

*Surgery Mammary Cancer*—More than fifty years ago Beatson observed that the rate of growth of mammary cancer might be inhibited

by oophorectomy. Dresser,<sup>9</sup> in 1936, reported on the effect of x-ray castration on the metastases to bone from carcinoma of the breast, feeling that the procedure was of value in patients who were still menstruating. Taylor<sup>10</sup> agrees with Dresser that in about one third of the patients with recurrent or inoperable cancer artificial menopause produces temporary regression or improvement. A further study of this problem has been under investigation at the Memorial Hospital and will be reported in the near future.<sup>11</sup>

*Surgery: Prostatic Cancer.*—Toward the close of the last century White and Cabot advised castration to reduce the size of benign hypertrophied prostates. Huggins,<sup>12</sup> considering these papers for the treatment of the same condition, again called attention to the subject but went further to apply it to advanced inoperable and metastatic prostatic cancer. Suffice it to say now that surgical castration seems to be a well-planned, acceptable, and relatively minor surgical procedure for the relief of incurable prostatic cancer. The effect seems to be fairly regularly obtained—diminishing the pain, reducing the size of the metastatic deposits, and improving weight and appetite. Huggins believes surgical castration to be of greater and more prolonged benefit than endocrine castration.

*Endocrine Therapy: Metastatic Mammary Cancer in Bone.*—The influence of androgenic substances on the serum calcium of skeletal metastases from mammary cancer has been studied by Farrow and Woodard.<sup>13</sup> In three cases of carcinoma of the breast metastatic to bone, injections of testosterone propionate were followed by a decided rise in the concentration of calcium in the serum and in the excretion of calcium in the urine. The chemical changes were accompanied by clinical and x-ray evidence of increased activity of the metastatic disease in the bones. In two cases of carcinoma of the breast without skeletal metastases, injections of testosterone, estrone, or progesterone were not followed by significant changes in the serum calcium levels.

The ability of testosterone and estrone to cause hypercalcemia in patients with carcinoma of the breast metastatic to bone appears to be caused by a stimulation by these hormones of the growth of the metastatic tumor. This in turn causes acceleration in the rate of bone destruction, accompanied by a flooding of the circulation by the products of osteolysis. The evidence demonstrated here that testosterone in large doses exerts a stimulating rather than an inhibiting effect on the growth of metastatic mammary carcinoma obviously contraindicates its use in this disease. The reason why an androgenic substance stimulates a tumor of a female reproductive organ remains obscure and merits further study.

*Endocrine Therapy: Metastatic Prostatic Cancer of Bone.*—It is believed that the results following the administration of stilbestrol are equal to, if not better than those following orchiectomy. But not all clinics are unanimous on the results. Huggins prefers surgical castration; Kearns<sup>14</sup> and Dean and his associates<sup>15</sup> feel that chemical castration is equally effective, thereby precluding surgical procedure. Kearns, in a recent report, noted that most surgical castrates suffered from mental depression, vasomotor disturbances, and lassitude; that there were unfavorable psychic and neurologic effects. Further argument for the use of estrogens was the observation of other investigators that since castration does not bring about complete cessation of androgenic activity, this procedure in some instances proves inadequate or ineffective and estrogen therapy must be resorted to. Kearns advises beginning treatment with 1 mg. of diethyl stilbestrol orally three times a day. This dosage is then reduced to 2 mg. daily for two to four weeks and then 1 mg. once a day for an indefinite period. Following such therapy there was a marked decrease in pain, while there was roentgenographic evidence of bone repair. Ethinyl estradiol was substituted for stilbestrol, since estradiol is a natural hormone and is, therefore, less likely to produce untoward effects. As the potency of estradiol is six to eight times that of stilbestrol, the dosage was regulated accordingly. Ethinyl estradiol caused less breast tenderness and gastric irritation than stilbestrol. The systemic effects following such treatment have been quite dramatic, the effect on the primary and metastatic disease less so.

### Hypnotics and Narcotics

Mild hypnotics and sedatives should first be employed in minimal doses, the amount being increased when necessary. Among these drugs are the new barbiturates and barbituric acid derivatives. Phenobarbital, sodium amytal, pentobarbital sodium, and seconal have been found satisfactory. The depressing action which followed the prolonged administration of the older hypnotics is less frequently observed with these newer drugs. Aspirin or phenacetin with caffeine may be combined for analgesic effect. When this form of medication is no longer effectual, then one may use codeine, or combine codeine with it. Finally, the opium derivatives will have to be employed.

As an advance in opiate medication, dihydromorphine hydrochloride (dilaudid) has now been used for almost a decade. Dilaudid has been employed in place of morphine because of certain distinct advantages it possesses. It has been said to be a stronger analgesic, requiring a dose one fifth that of morphine; it acts more quickly and is less likely to produce undesirable side-effects.

In therapeutic doses it has very little hypnotic action and does not affect intestinal peristalsis. When pain is to be relieved and sleep induced, some barbiturate should be combined with it. Dilaudid, unlike morphine, has very little effect on the gastrointestinal tract and rarely is responsible for nausea, vomiting, or constipation. Early cancer pain can often be relieved by a capsule containing  $\frac{1}{4}$  grain of dilaudid and 10 grains of aspirin. A solution of 1 grain of dilaudid in 6 oz of peptenzyme elixir provides an economical and flexible solution for oral administration, the dose being 1 or 2 teaspoonfuls.

In 1939 Eisleb and Schaumann introduced Demerol (1 methyl-4 phenyl-piperidine-4 carboxylic acid ethyl ester hydrochloride). It was immediately recognized as a potent and safe analgesic, approaching morphine in effectiveness. It was found to be most valuable as an antispasmodic. The drug is not a respiratory depressant and its atropin like effect with its sedative action makes it seem ideal for the relief of pain from visceral spasm. The dose varies between 50-100 mg orally or parenterally. In the author's experience the initial enthusiastic reports have not been confirmed in clinical trials.

Neither a patient nor a patient's relatives should judge the quantity of an analgesic or narcotic to be given, nor the time interval which should elapse between doses. Smaller amounts will be needed and the time interval should be lengthened if the medicine is given under close supervision. At times the employment of large amounts of narcotics becomes necessary and in such instances they should not be withheld.

### Specific Measures Directed Toward the Relief of Pain

Nerve pain, local or generalized, is often complained of. In the absence of definite evidence of physical involvement one may suppose that the neuritis may be due to an avitaminosis. The administration of vitamin B<sub>1</sub> may clear up many of the symptoms.

In certain cases when cancer has encroached upon nerves, diathermy has been advised and practiced. Subjectively, at times, this form of treatment has proved beneficial.

**Intravenous Alcohol Infusions**—As early as 1927 Thurz<sup>16</sup> investigated the influence of intravenous ethyl alcohol infusions upon the pain produced by inoperable malignant neoplasms. He recorded the prolonged analgesic effect following such therapeutics. The method has been used for recurrent and metastatic melanoma, mammary carcinoma, ovarian cancer, and carcinoma of the vagina.

Thurz is unable to account for the analgesic effect of the alcohol. He feels that the action is

twofold. The first action is directly upon the nervous system, and the second upon the growth itself. He states that, experimentally, the growth regresses in size following the intravenous administration of the alcohol, as a result, pressure on adjacent tissues, especially nerves, is reduced.

Careful blood and urine analyses before and during this type of medication showed no evidence of renal damage. The blood picture was unchanged.

**Technic**—For the infusions a 33 per cent ethyl alcohol solution (1 part absolute ethyl alcohol and 2 parts physiologic saline solution) is used. The initial dose is 1 cc of alcohol for each Kg of body weight. Thus a patient weighing 50 Kg (121 lbs) would receive 150 cc of the solution intravenously. The medication is administered through the usual infusion set with glass trap and the rate of drip is between 30 and 40 drops per minute. The needle should contain physiologic saline solution at the time it is introduced into the vein and the alcoholic solution should be washed out of the needle before withdrawal. If this precaution is not observed, pain is experienced and skin damage occurs. As soon as the alcohol is introduced the patient experiences transient pain along the course of the vein. This soon disappears. If the alcohol is administered at a rate exceeding 60 drops a minute there is loss of consciousness.

The alcohol is given every third day and the amount of solution is increased until 450 to 600 cc are given at one treatment.

**Response to Treatment**—The response following this treatment varies. Some patients become drowsy immediately and enjoy an undisturbed sleep which often lasts six hours. Others become noisy, laughing or crying, and exhibit all the symptoms of an alcoholic delirium, which ends in somnolence. They awake refreshed and show no ill effects from the therapy. Analgesia may be noted following the first treatment. The intravenous infusion of 33 per cent ethyl alcohol seems to be an entirely harmless procedure.

**Subarachnoid Alcohol Injection**—The injection of absolute alcohol into the subarachnoid space may be of great value in controlling the pain produced by metastasis to the lumbar vertebrae and pelvic bones from mammary and prostatic cancer, from the pressure of recurrent or inoperable gynecologic or genitourinary neoplasms. Two cubic centimeters of absolute alcohol are injected through a lumbar puncture needle. The patient should lie on the unaffected side or the side of lesser involvement, with the hips elevated. The alcohol level may be partially controlled by lowering or elevating the hips. One should not attempt anesthesia in this fashion except unilaterally, repeating the process if

there are indications for the treatment of the opposite side.

**Calcium Therapy.**—In 1933 Shear<sup>17</sup> reported the effects which followed the administration of large doses of calcium in metastatic carcinoma of bone and, in the same year, Behan<sup>18</sup> independently advanced the reasons for the relief of pain in cancer by calcium. Brunschwig,<sup>19</sup> in 1935, reported two striking results following its use. Ten per cent calcium gluconate was given intravenously in a dose of 10 cc. three times a day for one month and 10 Gm. of calcium gluconate was given three times a day by mouth. After the continued calcium medication roentgenograms demonstrated increased density in the destructive bone areas. The pain and discomfort were remarkably relieved.

In the writer's experience, medication with calcium must be continued indefinitely. At times, even more striking results are obtained with calcium therapy when it is combined with the administration of vitamins (A and D) and minute doses of thyroid extract. The diets of patients with incurable cancer are vitamin-deficient for several reasons. The amount of food taken is small. Besides, the diet is frequently liquid in character and lacks balance. The lack of vitamins A and D will affect bone, and if such vitamins are present in insufficient amounts in the diet calcium metabolism will be deranged. These vitamins may be supplied by using cod-liver or halibut-liver oil, plain or irradiated.

A change in calcium metabolism is also produced by ultraviolet irradiation. The increase of the serum calcium in the blood following exposure to ultraviolet rays may explain the beneficial effect of this type of irradiation on pain.

**Cobra Venom.**—Cobra venom was first scientifically employed at the Pasteur Institute, where it was found to be useful in relieving the severe pains accompanying malignant disease. While the work of these investigators has been reported by Macht<sup>20</sup> as being favorable, Lavedan,<sup>21</sup> at the Radium Institute in Paris, using cobra venom in 51 cases of cancer, obtained only insignificant analgesic effects and noted no influence whatever on the growths themselves.

The usual dose of cobra venom is 5 mouse units. (A mouse unit is the quantity of cobra venom solution required to kill a white mouse weighing 22 Gm. within eighteen hours after the intraperitoneal injection of the drug.) However, it is safer to use only half the contents of an ampule: 2½ mouse units. On the following day the entire content of an ampule—1 cc.—is administered. Similar doses are injected on successive days until a definite analgesia is noted. No unfavorable sequelae have been noted. Thereafter two or three injections a

week may be utilized to keep the patient comfortable. Therapy may be continued for months. Hypodermics should be given intramuscularly.

Very often cobra venom has been used as a last resort when all other therapeutic measures have failed. It was gratifying to find that in many instances analgesics and narcotics were gradually reduced and finally omitted after cobra venom had been given for sufficient lengths of time to become effective.<sup>22</sup> Some observers<sup>1</sup> have noted an improvement in their patients' mental attitude. Whether this is a true euphoria from the drug or merely the result of relief from pain and improvement in the general condition cannot be determined.

Now that so many drugs and procedures are available for relieving pain, no patient should reach the stage when he desires an operation in the hope that it may lead to death; nor should he be allowed to linger on in agony with his pain unrelieved. Unfortunately, it is still difficult, when life may likely last for many months, to counteract pain at all times, for if drugs are administered over a long period, they may eventually fail to act or may lead to demoralization which ultimately may be as distressing to the patient and his family as severe pain.

"There is no greater test of the capacity of a medical man than his ability to retain the confidence of a patient who is steadily going downhill and the management of a case of inoperable cancer will tax all the tact, knowledge, and skill of the ablest practitioner."

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# THE ROLE OF HYDROTHERAPY IN REHABILITATION

H J BIREND, M D, New York City

THE definition of medicine as given in the textbook is the art and science of preventing, caring for, and assisting in the cure of disease and the care of the injured. The physician has been called the "healer" or "restorer." The process of restoring or of undergoing restoration to health or efficiency has been called rehabilitation. Rehabilitation therefore means restoration to a former normal or almost normal capacity in order to enable an individual to make his livelihood again. Since in our time of war the term "rehabilitation" or "rehabilitation program" is often being used very confusingly, it must be pointed out that "rehabilitation" is a very complex process which includes several phases: the physical and mental restoration process under the guidance of the physician, which must be followed by the vocational rehabilitation process, which will secure as its final goal full social adjustment. Krusen,<sup>1</sup> in a recent publication, has discussed all the necessary steps of physical restoration and vocational guidance for the disabled soldier. He emphasizes the importance of medical cooperation in all phases of the rehabilitation process. The physical restoration process includes all necessary therapeutic procedures. Physical therapy is only one—however, an important one—of these therapeutic procedures. Its importance must be emphasized because it can be usefully applied in all steps of the rehabilitation program even when the phase of physical restoration seems to have been completed. The object of this presentation is to draw attention to this fact and to show the usefulness of one of the branches of physical medicine in every rehabilitation program—namely, hydrotherapy.

The historical development of hydrotherapy is most interesting. Elaborate bathing establishments were used by the Romans and Greeks in the classical age. The water cure was practiced extensively and the Turkish bath routine of our day still resembles the one used by the old Romans. During the centuries to follow hydrotherapy was almost forgotten, and it is only since the middle of the nineteenth century that its use has been revived. In the interim we find mention of an unpleasant but apparently effective use of hydrotherapy, the so-called dipping chair, used in New England for the control of

scolding housewives. Hydratic procedures first were prescribed almost exclusively by lay practitioners. Physicians were slow to recognize their value because of the unique and rapid development of medical science. When the microscope was invented Virchow was the first to trace the source of disease to biologic changes of the individual body cell. "Cellular pathology" since then has been recognized. The old conception of "humoral pathology" was abandoned. The great search for scientific explanations began. Almost all branches of medicine became firmly established during the years to follow. Hydrotherapy, however, failed to satisfy the scientists. There was no rationale for it that could be presented. Winternitz, of Austria, was the first who tried to coordinate hydrotherapy with the concept of the physiology of his days. In this country Simon Baruch<sup>2</sup> published the first scientific textbook on hydrotherapy in 1899. In reading this remarkable book one cannot but admit that many of the so-called modern concepts of physical medicine were known already fifty years ago, seen, of course, in the light of the physiology of those days. Despite Baruch's publication and the many efforts by others to develop hydrotherapy ever since, this form of therapy has still remained a stepchild in medicine, even in physical medicine.

It is only recently that successful attempts have been made to correlate the so far empirical hydrotherapy with the modern concepts of physiology.

The rapid development of the specialties in medicine made the physician, to a certain extent, forget to look upon his patient as a physiologic entity. There is a definite trend noticeable in many publications now to remind the physician of his duty not to forget that the diseased organ is only a part of the body and that the entire personality should not be forgotten.

The growing number of publications on the subjects of psychosomatic medicine and geriatrics, for instance, point in this direction.

Hydrotherapy is a form of nonspecific therapy. Because of the efficiency of drug therapy and chemotherapy its value is frequently overlooked by the physician who does not realize the far-reaching reactions caused in the body by external thermal stimulation of the skin. The skin acts as a transmitter of the stimuli applied to its surface. Its many nerve fibers transmit these to the centers, which in turn influence the voluntary and involuntary processes of the body.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1944.

Associate Physical Therapist, Hospital for Joint Diseases, New York City, and Visiting Physical Therapist, Goldwater Memorial Hospital, New York City.



The balance of the sympathetic nervous system thus can be controlled, electrolytic changes can be produced, and the endocrine system will be influenced. Since the peripheral circulation is regulated by three controls—namely, the central vasomotor center, the hormonal system acting via the circulation, and the local neurochemical axon reflex, the functional importance of the skin organ again becomes apparent. Winter,<sup>3</sup> in a British publication, has recently drawn attention to the modern aspects of counterirritation which will be referred to later on in this paper. An exchange of ions also occurs in a bath between the water and the skin tissue, which changes the structure of the skin itself. The role of the skin in controlling metabolism through heat regulation and its excretory and absorptive power is well known. Vitamins are formed in the skin. According to recent publications, it seems to play an important role in producing immunity. Agglutinins have been reported to have formed in the skin of animals after interdermal injections of paratyphoid *B. bacilli*. Antibodies are supposedly also formed in the skin. It would not be surprising if the old-fashioned method of treating measles and scarlet fever with warm baths of increasing temperature may some day be resumed. Seen in the light of the recent studies of the skin in immunity, this form of therapy at least does not appear to be ridiculous or even dangerous any more.

The condition and appearance of the skin are of great significance in order to guarantee a normal occurrence of all these reactions for the benefit of the patient. In chronic diseases the skin assumes a pale and unhealthy appearance. Here true dermatotherapy is in order.

Because of its long-known effects on the circulation, the nervous system, and the muscular system, hydrotherapy has been extensively used in all kinds of pathologic conditions. Experience, however, shows that its clinical application is largely limited to local use or to a limited number of rheumatic diseases or orthopaedic disorders when used generally. The whirlpool bath is the most-used hydriatic appliance in military and civilian hospitals because of its pain-relieving and relaxing effect and the marked stimulative effect it exerts on the circulation. Mechanically it will remove pus or necrosed tissue from acute or sluggish-healing wounds. The hot tub-bath is used for the treatment of spasm and pain in rheumatic or allied disorders. The third hydrotherapeutic modality frequently used in hospitals is the Scotch douche. It is mainly applied as an after-treatment to some other form of heat therapy, usually the cabinet bath, which is not at all a hydrotherapeutic procedure but an application of radiant heat. In recent years

underwater exercises in the pool or specially constructed tank have become very popular in post-operative orthopaedic conditions and in paralysis cases. All the hydrotherapeutic appliances mentioned so far are usually being used routinely with very little attention paid to the vast possibilities of adjusting the temperature, the duration of the application applied, the size of the area of the body involved, and the mechanical pressure. Because of their indiscriminate use the results vary; sometimes they are very good; on other occasions they are disappointing. Because of these disappointments and the empirical rationale hydrotherapy has been neglected by the medical profession and this is also the reason why it is mostly used locally and in surgical or orthopaedic cases only. From what has been said about the role of the skin organ as a transmitter of external stimulation, it follows that hydrotherapy can be efficiently used in many other pathologic conditions beside those mentioned above. Its important role in reconditioning the entire personality will be considered here.

The present war situation will affect the state of health of the entire population in many respects, which makes an extensive reconditioning program necessary during and even more after the war. Two groups of injury can be classified as arising from the war effort:

1. Direct injury or disease suffered in active combat or in the war industries. This is obvious.

2. Indirect injury caused by the tremendous change of the condition and way of life which a large part of the population has to undergo. The structure of many families has changed. The earner has gone to war; other members of the family have to pitch in. Accustomed habits of living, of nutrition, of clothing, of transportation, of work had to be changed and adjusted. These changed habits, combined with the worry about those in active service, will cause a great strain on many individuals. The symptomatology of neuromuscular hypertension and of physical and mental fatigue will be more and more observed in our patients. Complaints of headache, of dizziness, of palpitation, of indigestion and other gastrointestinal symptoms, of aches and pains all over, have become more and more frequent. The number of the so-called functional, not organic, or nonspecific diseases will rise. Not all these patients are sufferers from an original mental instability, although it should not be forgotten that the symptomatology of primary neurotic individuals will grow immensely. All these patients will deserve treatment in order to make them valuable participants in our postwar reconstruction. Drug therapy alone will not suffice and psychotherapy will either not be sought or cannot be afforded.

Physical medicine comes in here, and hydrotherapy, because of its nonspecific nature, should be accorded a front place in the reconditioning program.

For the first group of direct war casualties some of the hydropathic modalities have been mentioned already. Again it should be emphasized that even in treating local injuries and diseases more use should be made of those hydrotherapeutic procedures which involve the entire body. It is our experience that recovery from local conditions is hastened when the entire body is exposed to the external stimulation of the warm or cold applications, for the reasons given above. For the same reason hydrotherapy has its definite place in internal medicine. Almost all diseases of the circulatory system can be benefited by hydrotherapy if it is applied correctly. Local and general baths the temperatures of which are gradually increased or decreased will exert an important influence on the distribution of the blood, will change the blood pressure, and will influence congestion of the pulmonary circulation. The heart itself is influenced reflexly by thermic stimulation and a weak myocardium therefore can be strengthened. Local cooling of the heart region can give quick relief in tachycardia and has been proved to be of value in acute endocarditis. Towel baths, sponge baths, half baths, brush baths will promote dilation of the peripheral and skin vessels, will ease the circulation, and will reflexly influence the heart and the respiration. The use of balneotherapy in the form of carbon dioxide or oxygen baths for the treatment of acute and chronic circulatory and vascular disorders must be mentioned here, and is important in spa therapy.

In attacks of bronchial asthma we can use hot chest compresses, sitz baths of increasing temperature, and half baths successfully as an adjunct to drug therapy in order to relieve bronchial spasm.

A Priessnitz compress applied for a case of acute or chronic bronchitis is still a simple and efficient procedure, especially for children. When it is applied technically correctly there is no danger of the patient's contracting pneumonia, as so many parents dread. The chest compress, because of the reactive vasodilatation it brings about, will benefit the patient immensely. It diminishes coughing, stimulates the vasomotor system, and helps expectoration. Restless children will fall asleep almost immediately after its application.

In diseases of the kidneys warm baths will improve their circulation and will help restore their function to normal. Warm sitz baths are an old standby for inflammatory conditions of the bladder and the pelvic organs.

In diseases of the gastrointestinal tract the spasm- and pain relieving effect of wet hot applications on the abdomen are well known.

It almost appears to be absurd to mention even briefly here all these well-known and old-fashioned applications and some of their indications in internal medicine. But in our days of highly developed diagnostic, drug, electro- and other therapy they have been widely neglected and almost forgotten. The modern physician is not too much impressed by the old-fashioned hydropathic procedures. Our colleagues and nurses in the combat zone where the well-equipped physical therapy department and drugstore are not available should feel differently. Even when hot water is not available a cold, stimulating compress may become a life savior.

A few words must be said about the so called rheumatic diseases. Winter<sup>2</sup> and others have drawn attention to the significance of the skin in the causation of rheumatism. The beneficent effect of counterirritant measures in the treatment of rheumatic diseases is well known. Since hydrotherapy always involves stimulation of the skin, it is one of the oldest forms of therapy for these conditions. In a hydropathic application the three factors of temperature, time, and mechanical pressure can be greatly varied and adjusted to individual needs. Baruch<sup>2</sup> already has used the variations of the Scotch douche with good results. Where a Scotch douche is not available, brushing of the skin in a warm bath will produce similar results. The combination of water with the galvanic current in the form of hydrogalvanism has been revived recently<sup>4,5</sup> and permits a wide variety of skin stimulation. The physiologic effects of the galvanic current can be extensively utilized in a bath and have shown remarkable results in painful rheumatic conditions.

There is now to be considered the second group of diseases which are more or less of a functional character. Here it is our purpose to recondition the fatigued personality. Because of the fact that a rationale of hydrotherapy could not be established for a long time, its use has been branded by some physicians as purely suggestion. The foregoing discussion has shown that great and objective changes in all systems of the body, including the psychologic state of the patient, can be caused by hydropathic procedures. Stimulation of the body surface has definite consequences. It is, however, important to be aware of the reactions which may occur in order to guarantee an undisturbed change from abnormal to normal physiologic conditions.<sup>5</sup>

The procedures used for the treatment of functional condition are those involving the entire body surface. They can be classified according

to their strength of stimulation, which in turn depends upon the temperature of the application, the length of time for which it is applied, and the size of the area of the body it involves. The same ablution, the same sheet bath rub, the same partial bath, the same Scotch douche, the same full bath therefore may serve all purposes. It may have a sedative, a neutral, or a stimulating effect. This is why hydrotherapy lends itself admirably to nonspecific treatment if used correctly, and why disappointments are in order if it is used by unskilled hands. Time does not permit the enumeration of all the various hydrotherapeutic procedures used in the treatment of disturbances of the sympathetic nervous system or of the endocrine imbalances, of neurocirculatory asthenia, or of the true neuroses. Symptoms such as restlessness, sleeplessness, palpitation, dizziness, nervous headaches, and abdominal spasms will respond in a very gratifying way to hydrotherapy.

Here again all those appliances should be used which involve the entire body: the half bath, the brush bath, the sheet bath, the galvanic bath—just to mention a few. They form an excellent adjunct in the treatment of the convalescent phase of the injured and diseased because of their tonic effect on the circulation and all the other systems of the body.

In a rehabilitation program, therefore, hydrotherapy should by no means be restricted to the physical restoration period of a more or less local injury or disease. Its use must not be limited to the hospital. The rehabilitation centers of the Army, the Navy, the Veterans Administration, and of civilian institutions have developed an extensive system to restore and maintain physical fitness. In preparation for correct daily activities before taking up strenuous exercises or games, hydrotherapy should be used in the rehabilitation centers not only in the form of the recreational pool but also in form of appliances which are adjustable to individual needs.

During the vocational guidance and vocational training period correctly applied hydrotherapy will also help to keep the trainee fit. Properly administered hydrotherapy departments should be installed in rehabilitation centers and in the industries rather than just bathing establishments and shower rooms.

At this time the importance of spa therapy in rehabilitation must be mentioned. Hydrotherapy is one of the important factors in spa therapy. Even to mention it briefly would transgress the scope of this paper. It is hoped that the discussion later on will develop in this direction.

The size and the equipment of a hydrotherapy department depend on the character of the hospital or institution. One can run a good

hydrotherapy department with equipment limited to two surgical bathtubs plus one large-sized bathtub and bath brush. Every hospital should have a well-equipped hydrotherapy department in addition to its usual physical therapy equipment. The layout and equipment for a short-stay hospital certainly will differ from those of a long-stay hospital. The minimal equipment should consist of an institutional-sized bathtub, a whirlpool bath, a hydrotherapy table for the application of douches, and a steam jet. Tanks, pools, and other equipment can be added according to individual needs.

The best-equipped hydrotherapy department cannot work properly unless its technical personnel is well trained and the physician in charge is assured of the cooperation of the medical staff. Much explaining, enlightening, and training have to be done in this respect. In our department at the Hospital for Joint Diseases we have given more than 75,000 treatments during the past ten years. The results are very satisfactory and the cooperation of the medical staff is increasingly excellent.

At Goldwater Memorial Hospital the hydrotherapy department is an important part of the physical therapy. During the past five years 112,552 treatments have been given there. Hydrotherapy comprises about 30 per cent of the activities of the Physical Therapy Department. The large number of treatments given in the past ten years and the excellent results obtained in so many cases have convinced us of the great value of the hydrotherapeutic procedures used.

In conclusion, one more thought should be expressed. The rehabilitated individual finally returns home, and most homes have a small hydrotherapy department—the bathroom and its tub and shower. Here hydrotherapeutic technic is used at its worst. Too hot and too cold showers and baths given for too long or too short a period and with incorrect pressure may cause great harm. The daily bath and its routine can be the cause of much trouble. Very little attention is paid by the medical profession to the patients' daily bathing habits. A healthy vasomotor and circulatory system is able to adjust itself and even to benefit from strong stimulations. A weakened one may suffer definite harm. It is therefore necessary to educate the patient and the public how to use the applications of water correctly. Much can be done in this respect. Hydrotherapeutic home treatments then can be given with great benefit to the patient. Unnecessary trips to the clinic and unnecessary expenses associated with it can be avoided. Adjuvant home treatment has not only a medical but also a great social aspect.



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NEED *Calcium · Phosphorus · Vitamin D*

these times even with war liberal rationing, there may be an occasional scarcity of the products which are considered ample and dependable sources of Calcium—Phosphorus—and Vitamin D. In consequence, both the maternal and child's diet may not contain enough of these foods for daily needs.

Always needed is vitamin D—the poorest distributed of the vitamins—and when the diet must be fortified with calcium and phosphorus, it is convenient to give a supplement such as Squibb Dical-

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*Dicalcium Phosphate Compound with Viosterol*  
TABLETS . . . CAPSULES

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[Continued on page 2260]

Authorities Agree —

# NUTRITION STARTS WITH BREAKFAST!

And whole grain or enriched cereals are a fine means of supplying nourishment on which to start the day.

A GREAT share of the responsibility for putting over the National Nutrition Program rests on the capable shoulders of the Medical profession. And it is doing a splendid job.

But here's a way that job can be made easier — for it enlists flavor, real appetite-appeal, in making sure people get the better breakfasts they should have.

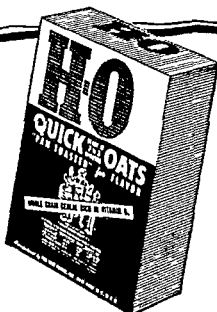
Whole-grain oats are recognized as one of our best sources of grain protein. They are high in energy content and supply natural

Vitamin B<sub>1</sub>, calcium, nutritional iron and phosphorus.

To this high nutrition value, H-O Oats adds the taste-appeal of pan-toasting. Cooked slowly and evenly over the dry heat of open fires, H-O acquires a distinct and tantalizing flavor that makes an instant hit.

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H-O Oats are the only oats that are pan-toasted—cooked over dry heat that leaves in all the concentrated fluffy oat goodness. Result? Flavor! Wonderful flavor made even more attractive by precision-cutting for fine, even texture and lighter, creamier oatmeal. H-O Oats do taste different. Deliciously different. Try 'em yourself—you'll agree



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[Continued from page 2258]

The question frequently arises: Can hydrotherapy be replaced by other methods of physical medicine? It certainly does not constitute a panacea which will replace other accepted forms of therapy.

In rehabilitation, however, it should be developed to a high degree. There is hardly any other method that can contribute more to the final cure of major and minor injuries and to the restoration of confidence and morale.

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### Discussion

Dr. Walter S. McClellan, *Saratoga Springs*—Two portions of this presentation are of particular interest to me. First, the importance of the skin organ as a receptor of impulses which act on the system through the delicate end organs of the nerves, and the fine network of the capillary system, which has not received the emphasis which it merits. The wide extent of the physiologic effects of hydrotherapy emphasizes the clinical importance of a thorough knowledge of these skin mechanisms. The speaker has today, and in other presentations, focused our attention on this matter. More investigations in this direction are in order.

In the second place, the speaker has mentioned spa therapy and balneotherapy but was not able to develop this phase of his subject. Spa therapy, which includes a program of treatment built up around either mineral waters or peloids (muds) as the keystone and utilizing accessory forms of physical treatment, rest, recreation, and dietotherapy, can play its part in the program of rehabilitation. It is applicable particularly in chronic cardiovascular conditions, rheumatic ailments, post-traumatic limitations, and functional nervous disorders of the less severe type. At the Veterans Facility at Saratoga a recent report stressed the good response of the

patients with chronic rheumatic and post-traumatic ailments following the use of mineral baths and local accessory heat treatments.

Krusen has pointed out the interest of the Army and Navy in this field. They are using some of our spa facilities, such as White Sulphur Springs, West Virginia, Glenwood Springs, Colorado, and others. In spas the therapeutic program stresses both the physical and the mental rebuilding which Dr. Behrend has described.

Avoidance of misuse and discredit of hydrotherapy can only be attained by a more thorough understanding of its proper application and by the accurate determination of its indications. In order to accomplish these goals, more physicians and trained personnel with a knowledge of hydrotherapy are required. The inclusion of instruction in hydrotherapy as one division of physical medicine must have a place in our medical schools both for the undergraduate and for the postgraduate physician. Then hydrotherapy and physical medicine as a form of therapy will find their proper place in relation to all types of treatment which the physician must use in proper proportions to accomplish the maximum relief for his patients.

Dr. Robert Muller, *New York City*—In rehabilitation, the after-care of patients who have been operated upon deserves special consideration. Orthopaedic surgery makes frequent use of metal nails, screws, plates, and caps which are permanently embedded in the bones. Whenever such conductors are in the tissues, the application of electric currents, short wave, etc., is contraindicated.

After operations, in the neighborhood of the incision, regions of anesthesia are present, where a burn may result when too much heat (hot-water bottle, diathermy, etc.) is applied.

Plastic surgery is extensively used in rehabilitation. Here the application of heat on the various skin grafts and flaps is especially dangerous, as the circulation in the anesthetic areas is poor. Necrosis of a full thickness of skin graft can follow indiscriminate application of heat.

In these three conditions—(1) whenever metal is present in the area to be treated, (2) when numbness fails to warn the patient of excessive heat, (3) when the area is poorly circulated—the only safe form of application of heat to promote healing is warm water in the form of a whirlpool bath or other hydrotherapeutic procedures.

### EXHIBIT OF NAVAL MEDICINE AT NATIONAL GALLERY OF ART

A collection of one hundred paintings and drawings of naval medicine was put on view at the National Gallery of Art, Washington, D.C., September 10, where it remained until October 8, after which the collection was sent on tour throughout the United States.

The artists whose works were exhibited in the program and the phases of naval medicine which they covered are as follows: Hospital Corps Training, depicted by David Stone Martin and Irwin

Hoffman at the Navy Medical Field Service School, Camp Lejeune, North Carolina; Combat Action, depicted by Joseph Hirsch and Kerr Eby at Pearl Harbor, New Caledonia, New Guinea, Guadalcanal, Tarawa, and Bougainville; and Treatment of Convalescents; these were depicted by Carlos Andreson and Julian Levy at the U.S. Naval Hospital, Portsmouth, Virginia, and National Naval Medical Center, Bethesda, Maryland.—*J.A.M.A.*, Sept. 16, 1944

Authorities Agree —

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Vitamin B<sub>1</sub>, calcium, nutritional iron and phosphorus.

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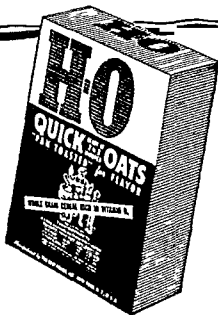
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# Diagnosis

## CLINICOPATHOLOGIC CONFERENCES

### FOURTH MEDICAL DIVISION OF BELLEVUE HOSPITAL

The patient was a 40-year-old Italian housewife first admitted on July 7, 1942, complaining of headaches, nervousness, and restlessness of one year's duration. The symptoms were increased at the time of the patient's menstrual periods and for the four days preceding admission were so severe that the patient was unable to sleep or eat. The past history was negative except for otitis media in childhood and rheumatic fever at the age of 14.

Physical examination on admission revealed an agitated, poorly nourished, chronically ill white woman. The essential positive findings were moderate thinning and tortuosity of the vessels of the fundi. The heart was slightly enlarged to percussion. Soft systolic murmur was present at the aortic area. The blood pressure was 220/120. The abdomen was soft. The liver was palpable 2 finger breadths below the costal margin. The spleen was not felt. The palms showed numerous red, nodular masses deep in the subcuticular tissues.

Blood smears and counts were normal. Examination showed a specific gravity of 1.022; albumin, 2 plus; a few granular casts, and a few white and red blood cells. The blood Wassermann test was negative. The blood nonprotein nitrogen was 32; carbon dioxide combining power was 33 volumes per cent. The blood cholesterol was 167; erythrocyte sedimentation rate was 115 mm.; blood agglutinins (3x) negative. The urine showed albumin 1 to 2 plus, occasional granular casts, and red and white blood cells. Electrocardiogram showed marked myocardial changes.

*Course.*—The temperature ranged between 101 and 102 F. for two weeks and then became normal. Shortly after admission the patient developed nuchal rigidity and a positive Brudzinski. The spinal fluid was normal, however, and by the fourth day the neck stiffness was found to be voluntary because of marked tenderness of the cervical spine. Generalized glandular enlargement, a barely palpable spleen, herpes of the upper lip, and spread of the palmar rash to the upper part of the chest were also noted at this time. By the second hospital week the patient appeared improved, the palmar rash was fading, the eruption on the chest became macular and papular with whitish centers, the spleen was definitely palpable, the fingers began to show clubbing, and the left wrist joint became

swollen, tender, and reddened. One observer noted a diastolic murmur at the apex at this time. By the third week the patient was much improved, the rash was gone, and the spleen was no longer palpable. She was sent to the country on July 30, 1942, having received only symptomatic treatment.

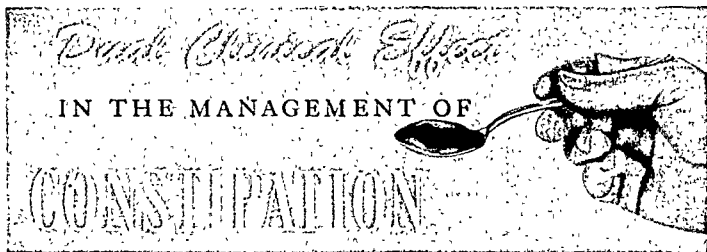
The patient was readmitted on October 9, 1942. While in the country she had had a recurrence of all her symptoms, including the rash and wrist joint involvement, which gradually cleared after two weeks. At the time of her menstrual period in September she developed an eruption on the right ear, a "bruise" on the left ankle, and a painful nodule in the left calf. During her October period an eruption on the left ear appeared. The patient sought readmission because of recurrence of severe, constant pain in the head and back of the neck for three weeks and vomiting for four days.

*Physical Examination.*—The blood pressure was 186/96. The positive findings were the same as before, except that there was now a raised, red, confluent eruption on the left ear lobe, a large ecchymosis of the left ankle, a tender nodule in the left calf, a systolic murmur over the whole precordium, the liver was palpable 3 fingerbreadths below the costal margin and tender, and the spleen was enlarged and tender. The laboratory findings were unchanged. The blood nonprotein nitrogen was 32 and the albumin-globulin ratio was 4.6:4.0. Biopsy of the muscle and of the nodule in the calf was taken. The patient was afebrile. The blood pressure varied between 170/84 and 218/108. Her symptoms cleared gradually with no specific treatment and she was discharged on November 1, 1942.

The patient was readmitted nine days later November 10 because of a cold, heavy feeling in the left lower leg and needle-like pain radiating from the left foot up the leg.

*Physical Examination.*—The blood pressure was 230/130. At this time a small hemorrhage was noted in the macula of the right ocular fundus. The heart murmur and the enlarged liver and spleen were unchanged. The left foot was pale, cold, and tender, with mottled cyanosis and absent dorsalis pedis pulsations; early clubbing of the fingers was again noted and there were a few macular eruptions over the legs.

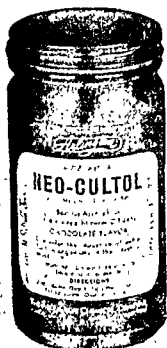
[Continued on page 2264]



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[Continued from page 2262]

**Laboratory Data.**—The red blood cell count was 4.20 millions. Hemoglobin was 12 Gm. The white blood count was 9,450, with polymorphonuclears, 88 per cent; platelets, 250,000. Blood nonprotein nitrogen was 30. Erythrocyte sedimentation rate was 70. Albumin-globulin ratio was 4.1:3.4. Bleeding time was 6 minutes; clotting time, 5 minutes 15 seconds. Prothrombin time was slightly prolonged. A blood culture was negative. Urine examination showed a specific gravity up to 1.021; albumin, 1 to 2 plus; an occasional trace of glucose, occasional granular casts; and red and white blood cells. Oscillographic readings were: left knee, 9 units; left ankle, 0 units; right ankle, 2 units.

**Course.**—The temperature rose to 104 F. on the fifth day, fell gradually to 99–100 F., where it remained for several weeks and then became normal. The blood pressure did not drop below 200/110. Several days after admission a rash appeared over the back of the arms, consisting of discrete pink, warm, itchy, raised macules. The palms again showed intradermal red papules and there was a suggestion of a butterfly rash over the face. On November 13 a sympathetic block was done, with slight improvement in the left leg. On November 16, 6 cc. of ammonium sulfate were injected intrathecally with no beneficial result. At the time of the injection the cerebrospinal fluid pressure was 300 mm. water, the fluid was cloudy and showed 300 cells, mostly polymorphonuclears, and a protein of 180, but there were no meningeal signs at this time. The left foot gradually became gangrenous and constant sedation was required to relieve the pain. On December 1 the patient suddenly developed lower abdominal and right costovertebral angle pain and tenderness, frequency, and passage of small amounts of urine. Coincident with this there was a slight rise in temperature, elevation of the white count to 20,000 with 89 per cent polymorphonuclear, and increase in the cellular elements in the urine. The episode subsided spontaneously within a few days. Examination of the ocular fundi on December 17 showed, numerous superficial hemorrhages and soft fluffy exudates, with one hemorrhage suggestive of a true petechia, marked tortuosity of the vessels, and marked auriculoventricular compression.

The lower left leg was amputated on January 9. The postoperative course was uneventful and the patient was discharged on March 2, 1943. Examination of tissue from the amputated leg was reported as showing chronic myositis.

The final admission was on April 17, 1944, when the patient entered the hospital because of headache, and weakness, which had been

periodically present ever since the onset of her illness.

**Physical Examination.**—The blood pressure was 250/110. The patient appeared poorly nourished and chronically ill. The pupils reacted sluggishly. The fundi showed old and fresh hemorrhages and papilledema, and there was a macular star on the left. The neck veins were distended and filled from below. The lungs were clear. The heart was enlarged and the precordial pulsations were marked. A soft systolic murmur was present at the apex and the base. The liver was palpable 3 fingerbreadths below the costal margin and was moderately tender. The spleen was not felt. No rash was noted.

**Laboratory Data.**—The red blood cell count was 2.76 millions, and the hemoglobin 5 Gm. There were 9,900 white cells, with 70 per cent polymorphonuclears, 2 per cent lymphocytes; transitional cells, 26 per cent; stab cells 6 per cent. Urine examination showed a specific gravity of 1.011; albumin, 3 plus; glucose, 1 plus; and a few white blood cells. Blood nonprotein nitrogen was 112. The electrocardiogram showed marked myocardial damage.

**Course.**—The temperature varied irregularly between normal and 101 F. The patient vomited frequently and appeared to suffer from generalized pains. On April 22 a pericardial friction rub was noted and the lungs showed moist rales over both lower halves. The patient became progressively weaker, had several generalized convulsions on April 29, and died on May 1, 1944.

### Discussion of the Case

DR. CHARLES H. NAMMACK: The question of causation is the main one in this case, but we cannot hope to know the answer without the postmortem findings. The case fits the criteria for lupus erythematosus disseminata. I think we must conclude that there were some valvular changes, since changing murmurs were noted.

DR. EMANUEL APPELBAUM: I saw this patient on her first admission and I believe that I was the first to suggest the diagnosis of lupus erythematosus disseminata. In the differential diagnosis periarteritis nodosa cannot be dismissed but the case does not fulfill the pattern of this disease. For instance, the joint manifestations, the lack of leukocytosis, and the absence of eosinophilia are features against that diagnosis.

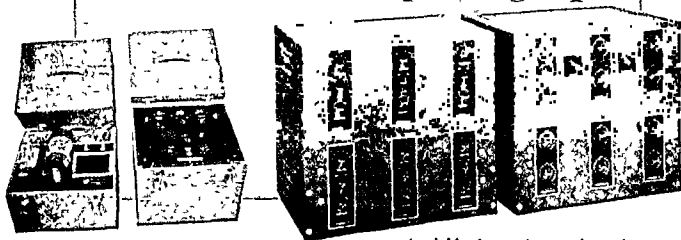
Rheumatic fever should have been considered. There was a history of past rheumatic fever, of joint pains, and of exacerbations and remissions. In addition, rheumatic fever does often show severe diffuse vascular disease. Furthermore, erythematous skin lesions may occur in rheuma-

[Continued on page 2266]

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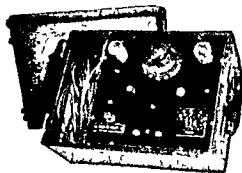


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[Continued from page 2264]

tic fever. These may take a papular form or be margined.

The papular type of lesion may be very much like the lesions seen in this case. Cerebral symptoms likewise occur on rare occasions in rheumatic fever. Glomerulonephritis, through a rare manifestation of rheumatic fever, has been observed in both the acute and the chronic forms of this disease. However, there are many features, such as the presence of lymphadenopathy and the absence of leukocytosis, which are against the diagnosis of rheumatic fever.

Dermatomyositis does not fulfill many of the criteria. It may be noted that certain investigators consider dermatomyositis, periarteritis, and lupus erythematosus disseminata as a common group of diseases due to disturbance of collagen tissues. In regard to the demonstration of myositis in the biopsy, it should be noted that such changes in muscle are not limited to dermatomyositis but may be found in lupus erythematosus disseminata.

Lupus erythematosus disseminata occurs in two forms—the acute, which runs a short, fulminating course, terminating in death, and the chronic form, which has a prolonged course, with exacerbations and remissions. This case would fit into the latter category. The other features favoring the diagnosis of lupus erythematosus disseminata are: prolonged fever, joint involvement, splenomegaly, rash, renal involvement, and bleeding tendency as manifested by purpuric lesions and ecchymoses. The features lacking in this case are evidence of bone marrow depression (anemia, leukopenia, and thrombocytopenia), and polyserositis. Disturbances in the blood picture may not become apparent until toward the end of the clinical course. It is possible that thrombocytopenia was present since only two platelet counts were done. The terminal pericarditis may have been a manifestation of serous membrane involvement.

Lupus erythematosus disseminata is essentially a disease of the epithelial and mesothelial tissues. Endocardial involvement may be lacking or may be an atypical verrucous endocarditis. This has been described in detail by Dr. Libman and has been known as Libman-Sacks' disease. Whether it is a distinct clinical entity is problematic. Most likely it is a phase of lupus erythematosus disseminata. The lesions in this form of endocarditis are frequently mural or pocket lesions, or involve the under surfaces of the valve. On rare occasions one observes a nonbacterial, thrombotic form of endocarditis. The gangrene of the leg could be explained on the basis of either localized thrombosis due to disease of the endothelium or to embolization. Indeed, the kidney

lesions are characterized by localized thrombi in the glomerular tufts.

Brain involvement may be seen in any of the diseases considered in the differential diagnosis. In rheumatic encephalopathy the brain may show thickened vessels with perivascular serous exudate. In lupus erythematosus disseminata there may be localized thrombi with multiple small areas of encephalomalacia. The reaction to these might account for the increased cell count and high protein content found in the patient's cerebrospinal fluid.

A review of all these features strongly favors the diagnosis of lupus erythematosus disseminata.

DR. MAX TRUBEK: I saw the patient only on her last admission when the picture was that of diffuse arteriolar sclerosis such as is seen in essential hypertension. The eyeground changes, I found, had been present apparently two years previously. Hypertension was constant and marked in this case and early hypertension is not characteristic of lupus erythematosus disseminata. The cardiac picture was just one of hypertrophy. The murmurs were not striking and not constantly found. All the palpable arteries were thickened. There were dilated veins on one side of the chest, which led us to consider the possibility of vena caval obstruction.

The urine showed good specific gravity originally and the intravenous pyelogram taken on the first admission is too good to fit in with extensive renal damage. Probably the vascular changes were the primary ones, since the renal failure was very late in the course of the patient's illness.

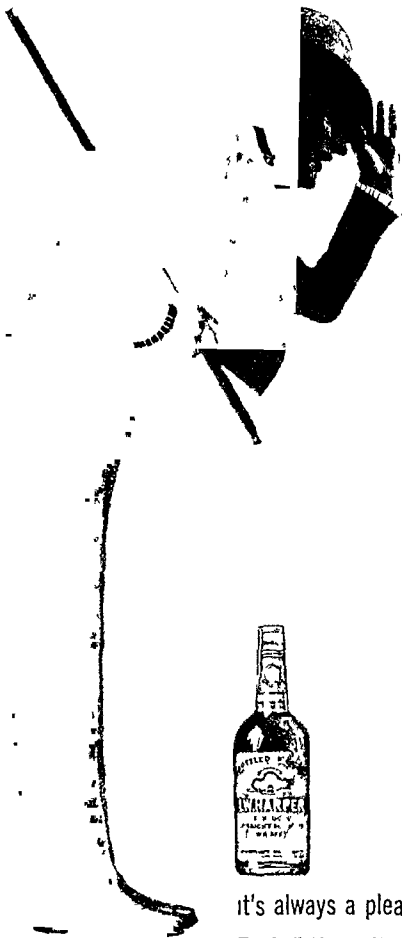
DR. ARNOLD KOFFLER: It is possible that the patient had essential hypertension before the acute disease was superadded. Rheumatic fever was not seriously considered. The joint involvement was minor, only the wrist being involved. The electrocardiographic changes were not those usual in rheumatic fever; in fact, the pains indicated muscular rather than joint involvement.

DR. A. W. FREIREICH: The Drs. Reifstein reported seventeen cases of lupus and related diseases which came to autopsy. The only constant postmortem finding was involvement of the serous membranes. All of the cases showed a pleuritis, many of them showed a pericarditis, and a few showed a peritonitis. The absence of any of these findings is a serious drawback to the diagnosis of lupus erythematosus disseminata.

DR. KOFFLER: This case is difficult diagnostically but very interesting. On the patient's first admission, I considered this to be an acute illness superimposed on some chronic pathology—that is, either essential hypertension or chronic

[Continued on page 2268]

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[Continued from page 2266]

glomerulonephritis. The palmar rash, which was macular but principally purpuric, the temperature, severe headache, and meningismus suggested several diseases, but principally Rocky Mountain spotted fever. However, the course of the illness, the clinical features, and the persistent absence of positive agglutinations ruled out this diagnosis. We were confronted with a variable group of disease into which this case might fit. Specifically, we can list the following:

1. Lupus erythematosus disseminata.
2. Periarteritis nodosa.
3. Dermatomyositis.
4. Subacute bacterial endocarditis.

Without the postmortem findings, I am sure that the diagnosis cannot, with any accuracy, be made.

Several diseases can be ruled out with some degree of certainty. Subacute bacterial endocarditis can be dismissed in the absence of a single positive culture, in spite of the possibility

TABLE 1

<i>Lupus Erythematosus Disseminata</i>	<i>Dermatomyositis</i>
Sex: Predominantly female	Often occurs in males and in a wider age group
Fever: Variable, irregular, prolonged	Same type
Cutaneous Lesions: Lupus, purpurae, petechiae with white centers	Edema and telangiectasis of eyelids; atrophic areas over fingers and sometimes over the larger joints and trunk; areas of erythema over muscles involved; hypertrichosis; peculiar whitish areas on the oral mucous membranes and tongue
Muscles: Myositis	Marked tenderness
Joints: Arthralgia, occasional "rheumatoid arthritis" reported	Are spared, but involvement of muscles and tendons may cause contractures
Heart: Myocardial changes are not characteristic; there is usually low voltage. Endocardial verrucae described by Libman and Sacks. Pericardial rub may be present; effusions are frequent. Systolic murmurs are frequent but may not indicate that an endocarditis is present	Rarely involved; tachycardia is frequent
Lungs: Pleural effusion is common; friction rub may be present; bronchopneumonia is frequent	Rarely involved
Lymph Nodes: Frequently enlarged	Less commonly affected
Spleen: May be enlarged but as a rule it is not markedly	Not large
Blood: Progressive anemia	Secondary anemia
Kidneys: There is a diffuse vascular glomerular disease and occasionally nephritis	Changes not usually significant
Hypertension: Is usually not marked, but may occur	Not usually present
Ophthalmoscopic findings: Hemorrhages and exudates may be present. Occasionally there is papilledema	No changes
	Cerebral Symptoms: Irritability, convulsions

of embolization to the left leg, but we cannot definitely state that this was an embolic phenomenon. It may have been the result of local thrombosis resulting from arterial disease.

Periarteritis nodosa was never completely ruled out and still remains a possibility in spite of one negative biopsy report.

The diseases which we must consider to be most probable are lupus erythematosus and dermatomyositis. From the outline of the clinical features of each shown in Table 1, it becomes evident that these features overlap considerably.

In considering lupus erythematosus disseminata, we must include Libman-Sacks' disease, which need have for its criteria neither the cutaneous lupus lesions nor the endocardial lesions first described by the authors. The cause of this disease is not known, as that of lupus erythematosus, to which it rightfully belongs; it occurs predominantly in the female. Its duration may be months or years. The fever is variable and irregular; arthritis and arthralgia may be present. The cutaneous lesions may be of several types—lupus, dermatomyositis, petechiae with white centers, and purpurae. The lymph nodes may be enlarged. The kidneys show diffuse glomerular disease—occasionally nephritis and usually no hypertension. Spontaneous serous effusions occur. Pericarditis is very frequent. Pleurisy with or without effusion may be present. The muscles may show myositis and occasionally dermatomyositis. The heart may show a systolic murmur. The spleen is moderately enlarged. There is usually a progressive secondary anemia. It is interesting to note that Christian, in 1935, described a disease with long-continued fever and with inflammatory changes in the serous and synovial membranes and essential glomerulonephritis—a clinical syndrome of unknown cause.

Banks, in 1941, made a suggestion which to me seems very sensible—namely, that there is a common denominator in scleroderma, dermatomyositis, lupus erythematosus, Libman-Sacks disease, and periarteritis nodosa, and that this denominator is probably arterial disease.

I might say that while my impression of this case today seems best to fit into lupus erythematosus disseminata, the overlapping of the diseases discussed makes it necessary to consider the others as distinct possibilities.

### Pathologic Report

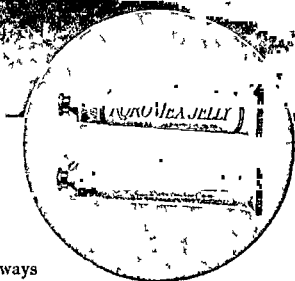
The patient was a woman of 40 who was admitted for the first time in 1942 for headaches and nervousness of one year's duration. She was found to have hypertension; the urine was well concentrated and contained albumin, granu-

[Continued on page 2270]



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[Continued from page 2268]

lar casts, red blood cells, and white blood cells. An electrocardiogram showed myocardial damage. The patient had also nodules in the subcutis of the palm, covered by erythematous skin. During her stay at the hospital she showed a maculopapular rash of the palms and chest, associated with fever, leukocytosis, and enlargement of the spleen and the lymph nodes. All these symptoms subsided spontaneously.

Her second admission was two months later, for recurrence of all her symptoms, including the rash. A nodule developed in the calf. After biopsy of the nodule there was a diagnosis of granulomatous inflammation, possibly Bazin's disease. Muscle biopsy showed no pathologic changes. The symptoms, except for the hypertension, disappeared spontaneously. The third admission was nine days after the patient's discharge from the hospital, for beginning gangrene

of the left foot, which was amputated three months later and showed chronic myositis. In the eye-grounds exudates and hemorrhages were found. The patient's final admission was one year later for exacerbation of her initial symptoms. In addition to the hypertension, urinary findings and eyeground changes, she had severe anemia, nonprotein nitrogen of 112 mg. per cent, and developed pericarditis and evidence of heart failure.

The patient died after several attacks of generalized convulsions. At autopsy generalized arteriolar sclerosis and focal arteriolar necrosis were found, with thrombosis of the small vessels and infarcts of the liver. There was organizing pericarditis and evidence of heart failure. Except for a small tubercle in the myocardium, no evidence of active tuberculosis was found. Due to limitations in the autopsy permit, the brain was not examined.

#### CANCER FOUNDATION SEEKS FUNDS

On September 4 the National Foundation for the Care of the Advanced Cancer Patients, Inc., opened a campaign to raise \$1,800,000 to provide beds and care in established institutions at low cost for incurable cancer patients. The campaign will be carried out under the direction of the Foundation's executive committee, consisting of Julius J. Perlmutter, president; Dr. Frank E. Adair, president of the American Society for the Control of Cancer; Dr. Roscoe R. Spencer, director of the National Cancer Institute, Bethesda, Maryland; John W. Wingate, of New York University; Morris M. Bernstein, treasurer; Morton Morrison, secretary of the foundation, and Mrs. Francis J. Rigney, commander of the Metropolitan area of the Women's Field Army of the New York City Cancer Committee.

#### INTERNATIONAL MEDICAL ASSEMBLY

The twenty-ninth annual International Medical Assembly of the Inter-State Association of Medical Associations of North America was held in Chicago on October 17, 18, 19, and 20, 1944, at the Palmer House.

The following New York State doctors were on the program: Dr. John J. Moorhead, consulting surgeon, New York Post-Graduate Medical School and Hospital, and Reconstruction Hospital; and Dr. John F. Erdmann, attending surgeon, New York Post-Graduate Medical School and Hospital.

Dr. Erdmann was also president of a clinic; Dr. Walter W. Palmer, of New York City, was a member of the committee on medical research and advancement; and Dr. Russell L. Cecil, of New York City, was on the program committee.

#### PENICILLIN MAY MASK SYPHILIS SYMPTOMS

Penicillin used to treat gonorrhea may mask or hide the symptoms of syphilis in patients who have both diseases, physicians of the U.S. Public Health Service, Federal Security Agency, reported.

However, the possibility of overlooking syphilis symptoms in gonorrhea patients treated with penicillin can be avoided if special microscopic tests are made before penicillin is used, and if blood tests are made after penicillin treatment has been completed, it was reported by Dr. C. J. Van Slyke, of the Public Health Service Venereal Disease Research Laboratory, Staten Island, and Dr. S. Steinberg, of the U.S. Marine Hospital, New York City.

The masking effect of penicillin on syphilis symptoms is due to the fact that the relatively small amounts of penicillin required to cure gonor-

rhea are sufficient to cause disappearance of the spirochete germs of syphilis from syphilis sores, although not sufficient actually to cure syphilis. When serum from the sores is examined under a special microscope after penicillin has been used, the spirochete germs will not be seen, and the examining doctor may be misled to conclude that the patient was not infected with syphilis. Making the microscope examination before treatment with penicillin prevents this possible error, the Public Health Service workers said.

A blood test for syphilis some time after the treatment of gonorrhea has been completed is advisable because blood tests do not always reveal very new syphilis infections immediately after they have been acquired, it was pointed out.

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# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M. D., Chairman (428 Greenwood Place, Syracuse); George Baehr, M. D., and Charles D. Post, M. D.*

## Endocrines in Gynecology

THE Medical Society of the County of Broome met on October 10 at 8:30 P.M. in the auditorium at Binghamton City Hospital for postgraduate instruction in gynecology. A lecture, "The Practical

Applications of Endocrines in Gynecology," was delivered by Dr. Morris Aaron Goldberger, associate gynecologist at Mount Sinai Hospital, New York City.

## Diseases of the Skin

POSTGRADUATE instruction in general medicine was given to the Medical Society of the County of Seneca on October 12 at 2:00 P.M. at the Willard State Hospital in Willard.

The lecture was entitled "Common Diseases of

the Skin," illustrated with color photography, and was delivered by Dr. Leon H. Griggs, associate professor of clinical medicine (dermatology and syphilology) at Syracuse University College of Medicine.

## "Penicillin Therapy"

POSTGRADUATE instruction in penicillin therapy was given before the Medical Society of the County of Herkimer on October 10 at 5:00 P.M., at the Mohawk Valley Club. The speaker was Dr. Frank L. Meleney, associate professor of clinical

surgery at the College of Physicians and Surgeons, Columbia University.

This instruction was presented as a cooperative endeavor between the Medical Society of the State of New York and the State Department of Health.

## Tropical Medicine

THE medical staff of Memorial Hospital of Greene County met on September 28 at 9:00 P.M. at Memorial Hospital, Catskill, for postgraduate instruction. Dr. Barton F. Hauenstein, assistant professor of medicine at the University of Buffalo

School of Medicine, spoke on "Present and Postwar Importance of Malaria and the Dysenteries."

This instruction was presented as a cooperative endeavor between the Medical Society of the State of New York and the State Department of Health.

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## NEW APPOINTMENTS MADE IN TUBERCULOSIS FIELD

Recent appointments of personnel have been made through the employment service of the State Charities Aid Association's State Committee on Tuberculosis and Public Health.

Miss Amy E. Rogers, Englewood, New Jersey, was appointed executive secretary of the Cattaraugus County Tuberculosis and Public Health Association, Inc., August 1. She is a graduate of the Central School of Hygiene and Physical Education, now the Department of Physical Education, Russell Sage College, Troy. She received a B.S. degree from the School of Education, New York University, last June. Since 1937, she had served as director of physical education for nurses at the Jersey City Medical Center, School of Nurses.

Miss Frances L. Kraft, field demonstrator on the State Committee's staff, who served as acting executive secretary of the Cattaraugus Association for the past year, has received a similar appointment for the next four months by the S.C.A.A.'s Genesee County Christmas Seal Committee, Batavia, preparatory

to the employment of an executive secretary by that Committee in January. Miss Kraft was formerly associate professor of biology, Wells College, Aurora, New York.

Miss Catharine Hyde, who was graduated from Vassar College in 1928, has joined the State Committee staff as a trainee. Miss Hyde has had extensive high school teaching experience in social studies, English, and mathematics.

Miss Caroline J. Lum, Barker, New York, joined the State Committee's staff on October 9 as a trainee preparatory to becoming executive secretary of the Wayne County Tuberculosis and Public Health Association on November 1. Miss Lum is a graduate of Buffalo State Teachers College in home economics and received additional training in nutrition at the State College of Home Economics, Cornell University. In recent years she has been associated with the Farm Security Administration and the State Emergency Food Commission.—S.C.A.A. News, September, 1944

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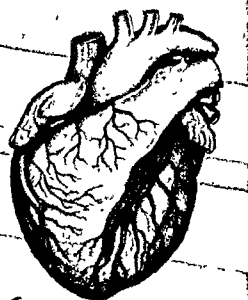
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# Medical News

## Annual Conference of State Secretaries and Editors

THE Annual Conference of Secretaries of Constituent State Medical Associations and Editors of State Medical Journals will be held in Chicago at the offices of the American Medical Association on Friday and Saturday, November 17 and 18. Two sessions of the conference will be held on Friday, November 17, the first at 10:00 A.M. and the second on the afternoon of that day. On the evening of November 17 a program given over to the discussion of topics of particular interest to editors of the journals of constituent state medical associations will be presented at the Palmer House. The concluding session of the conference will be held at the offices of the Association on the morning of Saturday, November 18.

While these annual conferences have each year

been attended by nearly all of the secretaries of constituent state medical associations and editors of medical journals of those associations, there has been a constantly increasing attendance of other officers of constituent state medical associations and officers of component county and district medical societies, and of late years a very considerable number of members who do not occupy official positions have been present. The members of all those groups will be cordially welcome at the November conference.

All who expect to attend the conference this year are especially urged to make necessary arrangements for hotel accommodations and railroad transportation at the earliest possible time.—*J.A.M.A., Sept. 23, 1944*

## Plans Outlined for Medical Training After War

OUTLINING the educational facilities required after the war for returning medical officers, Victor Johnson, M.D., and F. H. Arestad, M.D., secretary and assistant secretary, respectively, of the Council on Medical Education and Hospitals of the American Medical Association, in a report in the *Journal of the Association* for September 23 present recommendations to the hospitals and medical schools of the country for meeting the educational challenge of the postwar period.

Their report is based on studies by the Council and returns on questionnaires sent to medical officers by the Committee on Postwar Medical Service and analyzed by Lieut. Col. Harold C. Lueth, (MC), Surgeon General's Liaison Officer in the headquarters of the Association.

"Meeting the requirements of returning medical officers for additional training," Drs. Johnson and Arestad say, "is a serious responsibility which will require the continued joint efforts of the Committee on Postwar Medical Service, the Council on Medical Education and Hospitals, the Surgeons General of the Army, Navy, and Public Health Service, hospitals approved for internships and residencies, the American boards in the medical specialties, medical schools, state licensing boards, the Veterans Administration, foundations, county and state medical societies, and every institution capable of providing advanced training to physicians.

"On these physicians rests a large share of the responsibility for the quality of medical care to be provided the nation in the decades following the war. Many entered the services after an abbreviated internship. Others recognize the need for further education to equip themselves to return to their practices or to new locations in which they

an editorial in the same issue, port, says:

uggests ways in which efforts may meet the need. Returns on the ent to all medical officers are now

numbers which clearly reflect the st in continuation training. Analy-

random sample has already been data are indispensable for effec-

medical officers will want house-

officer training of six months or more. Since demobilization will probably extend over some time, the number of additional places required will probably approximate 5,000 during the first year. Apparently most expansion will be required in otolaryngology, surgery, obstetrics and gynecology, and ophthalmology, which may need to double their facilities. Expansions of 50 to 70 per cent seem to be indicated in urology, internal medicine, orthopaedic surgery, and pediatrics.

"Somewhat fewer officers are likely to seek shorter courses; about 9,000 officers will seek full-time training of one to six months' duration. In 1943-1944 there were nearly 27,000 physicians enrolled in such courses. However, over 90 per cent of these were in short courses of about a month. Apparently more than 90 per cent of those desiring review or refresher courses will seek training in somewhat longer courses of two to six months' duration. Many more courses of that duration will be required.

"In the light of the figures given, all institutions which can contribute to meeting the need are obligated to review their resources and prepare estimates of the additional facilities they can provide, to facilitate the achievement of the program outlined. . . .

"With continuing operation of the . . . [various agencies and groups concerned] there is every reason to expect that the needs will be met. Information now being collected from all educational institutions will be made available in the near future. . . ."

In summarizing their report, Drs. Johnson and Arestad say that the Council on Medical Education and Hospitals recommends, in order to meet the educational challenge of the postwar period, that:

Every hospital approved by the Council for internships should review its present and potential facilities and be prepared on request to submit to the Council estimates of the additional physicians it can accommodate as house officers in general medical training without jeopardizing high educational standards.

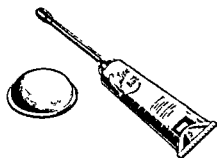
Every residency and fellowship hospital approved by the Council and acceptable to the various American boards should be prepared to submit to the Council and to the respective boards estimates of the



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[Continued from page 2274]

additional physicians it can accommodate as house officers in already approved residencies.

Every internship hospital not now approved by the Council for residencies should be prepared to report on such facilities it may possess as may warrant consideration for approval of residencies, particularly in those specialties requiring most expansion.

Every approved residency hospital which has not yet developed its educational programs to full capacity should consider the organization of educational residencies in specialties not yet approved by the Council.

There should be developed in approved hospitals graduate externships to provide training of short duration to discharged officers not housed at the hospital but engaged in full-time hospital work.

Medical schools, societies, and foundations should

plan especially to meet the probable demands for full-time review and refresher courses of two to six months' duration.

Appropriate work in the basic medical sciences should be included in all postwar house-officer training programs.

Consistent with national security and postwar military needs, teachers who are medical officers should be demobilized for the training of discharged officers before the prospective students.

Although modification of present estimates may be required when further questionnaires have been returned from medical officers, plans by all medical educational institutions for expanded postwar facilities should commence at once.

Full use should be made of the period between the surrender of Germany and that of Japan to provide educational training for as many officers as possible while still retained on active service.

### Conference to Speed Research in Fight on Cancer

**I**MPRESSED by the benefit they had derived by discussing the cancer problem as a group, and convinced that cancer research in widely separated fields would make more rapid progress if it were planned and organized, the forty scientists who attended sessions held by the Conference on Parental Influence in Cancer, held at Bar Harbor, Maine, September 21-25, adopted a procedure which resembles a charter with fourteen points.

In the preamble a sharp distinction was drawn between influences which may be hereditary and therefore may run in families and those which are definitely not hereditary, such as chemicals, hormones, and human milk. These influences need much further study.

The conference decided that "it is imperative to extend our knowledge of the interaction of these two major influences in man" and that it is desirable to include in the study all kinds of benign or malignant tumors "as well as conditions leading to either of these."

The conference agreed that it is better not to define cancer scientifically because pathologists are not always certain at what point a tumor becomes a cancer. For practical purposes it was decided, as one of the fourteen points, to accept "the diagnosis made by competent pathologists on the basis of microscopic examinations."

Clinical findings without a microscopic examination would be accepted only in the case of families that seem to be of a cancerous strain.

Because of the lack of trained specialists the research is limited to cancer of the breast and the female sex organs.

Another of the fourteen points calls for study "of possible hormonal influences on breast cancer with special reference to ovary, adrenal, and pituitary glands," of microscopic examinations of the breast much more extensive than those usually made, of autopsies made on women who have not died of breast cancer, and of "the possible presence of a milk influence in women." Such an influence has been established in cancerous strains of mice. A similar procedure is to be followed in studying cancer of the female sex organs.

To study apparently hereditary cancer, designated general and cancer hospitals will be asked to supply records, of the kind desired, which means, "detailed data regarding all members of the family continued throughout life." Each hospital is to set up a control study group, selected so as to supply entirely comparable information.

Still another of the fourteen points calls for the creation of "a central agency of national scope to coordinate and guide the study" of cancer of the types immediately under consideration. "The attention of the medical profession and of health authorities is to be called to the need for gathering reliable data regarding the incidence of various forms of cancer by special survey or preferably by making cancer a reportable disease," it was stated.

The final point dealt with the correlation of the findings of experimenters with laboratory animals and of scientists who are studying human cancer.

A partial list of those invited to attend the Conference on Parental Influence on the Incidence of Human Cancer at Bar Harbor included Dr. F. E. Adair, president of the American Cancer Society and head of the Breast Cancer Service at the Memorial Hospital, New York; Dr. H. B. Andervont, principal biologist at the National Cancer Institute, Bethesda, Maryland; Howard Blakeslee, science writer of the Associated Press and former Pulitzer Prize winner; Dr. F. Blank, director of the Survey of Constitution in Cancer, Bureau of Human Heredity, London, England; Dr. W. Ray Bryan, biologist at the National Cancer Institute; Dr. D. R. Charles, zoologist at the University of Rochester; Dr. Leon Cole, professor of genetics at the University of Wisconsin; Robert Cook, editor of the *Journal of Heredity*, Washington, D.C.; Dr. William Cramer, research associate at the Barnard Hospital, St. Louis, Missouri; Dr. F. Duran-Reynals, associate professor of bacteriology, Yale University; Dr. H. S. N. Greene, associate professor of pathology, Yale University; Dr. W. E. Heston, geneticist at the National Cancer Institute; Dr. Waldemar Kaempfert, science editor of the *New York Times*; Dr. M. L. Levin, assistant director of the Division of Cancer Control of the New York State Department of Health; Dr. Herbert Lombard, director of the Division of Adult Hygiene of the Massachusetts Department of Health; Dr. Clara J. Lynch, associate of the Rockefeller Institute, New York; Dr. Madge T. Macklin, assistant professor of histology and embryology, University of Western Ontario, London, Ontario; Dr. R. G. Meader, assistant professor of anatomy and assistant director of the Jane Coffin Childs Memorial Fund, Yale University; Dr. Douglas Murphy, professor of gynecology at the University of Pennsylvania; Dr. James B. Murphy, member in charge of cancer research at the Rockefeller Institute; Dr. C. P. Oliver, director of the

[Continued on page 2278]

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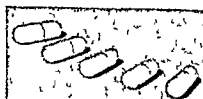
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[Continued from page 2276]

Dight Institute of Human Heredity, University of Minnesota; Dr. Sigismund Peller, instructor in anatomy, New York University; Dr. C. P. Rhoads, director of the Memorial Hospital, New York; Dr. Mildred W. S. Schram, advisory trustee of the International Cancer Research Foundation, Philadelphia, Pa.; Dr. E. W. Shrigley, Department of

Immunology, Yale University; Dr. R. R. Spencer, Director of the National Cancer Institute; Dr. Laurence H. Snyder, professor of medical genetics at Ohio State University; Mr. John J. O'Neill, New York *Herald Tribune* Science Editor; Dr. Roderick Heffron, Commonwealth Fund; Dr. Lester J. Evans, Commonwealth Fund; and Dr. L. C. Strong, Yale University.

## County News

### Albany County

A meeting of the county society was held on September 27 at 8:30 p.m. in the auditorium of the Albany College of Pharmacy.

Following a short business meeting the vice-president of the county society, Dr. Arthur J. Wallingford, gave the scientific address—"Ascites in Gynecology." Dr. Wallingford is professor of gynecology and director of the Department of Gynecology and Obstetrics at Albany Medical College.

An address by Dr. Arthur J. Wallingford was the feature of the first regional conference on cancer held in Albany on September 20, under the direction of the Women's Field Army of the American Cancer Society.\*

### Dutchess County

A regular meeting of the county society was held at the Wassaic State School, Wassaic, New York, Wednesday, September 20, at the invitation of the director, Dr. Raymond G. Wearne.

Dinner was served at 7:00 p.m. The Scientific program was an address, "Recent Advances in the Diagnosis and Treatment of Chest Diseases," by Dr. George Guthman Ornstein, director of medicine at Seaview Hospital, Staten Island, New York, director of tuberculosis at Metropolitan Hospital, New York City, consultant, Horton Memorial Hospital, Middletown, New York, and clinical professor of medicine, New York Post-Graduate Medical School.

A special meeting of the county society was called on August 30 at the Nurses' Home at Vassar Brothers Hospital in Poughkeepsie to discuss poliomyelitis.

Dr. James L. Wilson, professor of pediatrics and director of the Department of Pediatrics at the New York University College of Medicine, spoke on "Clinical Features—Pathology, Diagnosis, and General Treatment." "Physical Therapy in the Acute and Convalescent Stages" was the title of an address by Dr. Philip M. Stimson, associate professor of clinical pediatrics at Cornell University Medical College. A paper on the "Epidemiology of Poliomyelitis" was read by Dr. James E. Perkins, Director of the Division of Communicable Diseases of the New York State Department of Health.

### Erie County

A stated meeting of the county society will be held on Tuesday, October 24, in the Georgian Room of the Hotel Statler in Buffalo.

The manual, "Diagnostic Standards and Classification of Tuberculosis," is being offered to physicians by the Buffalo and Erie County Tuberculosis Association.

This manual covers the pathogenic development of pulmonary tuberculosis including the primary phase, reinfection phase, hematogenous disseminations, and the healing or repair processes. Since correlation of all findings in a case of tuberculosis on a sound conception of pathogenesis is necessary in clinical practice, the manual illustrates some of these correlations.

Differential diagnosis of pulmonary disease is summarized as well as the various stages of pulmonary tuberculosis. Definitions regarding extent of pulmonary lesions, severity of symptoms, clinical status, etc., are given.

### Jefferson County

Dr. George E. Sylvester, of Black River, one of the oldest practicing physicians in northern New York, observed his eightieth birthday on September 5. He has conducted a medical practice in Black River continuously for fifty-five years.

No special celebration was held and the doctor continued a daily routine he has followed practically ever since he entered the medical profession. He enjoys good health and still maintains a stiff daily schedule of from fourteen to sixteen hours.

Dr. Sylvester is a past president of the Jefferson County Medical Society. He has served as village health officer and health officer of the town of Rutland for many years.

Always active in community functions and affairs, he was president of the board of education at the time that a large frame school house was constructed about 1899 in Black River.\*

### Kings County

For six consecutive years postgraduate courses in various aspects of pathology have been offered at the Israel Zion Hospital, Brooklyn. For the fall season of 1944, beginning on October 17, the course selected will be "Pathology of Internal Medicine."

This course is designed to familiarize the internist as well as the general practitioner with the fundamentals of gross and microscopic pathology of internal medicine. Great stress is laid on gross pathologic diagnosis of tissues and organs.

This course is conducted by Dr. Jacob M. Ravid under the auspices of the Joint Committee on Postgraduate Education of the Long Island College of Medicine, the Medical Society of the County of Kings, and the Academy of Medicine of Brooklyn.

Further information may be obtained from the Registrar, 1313 Bedford Avenue, Brooklyn, New York.

\* Asterisk indicates that item is from a local newspaper.

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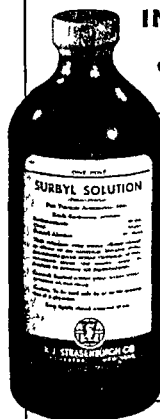


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[Continued from page 2278]

to the 1944 Deficit Fund for county physicians in the armed forces was \$12,376.50.

### Monroe County

The county society inaugurated its 1944-1945 radio broadcast program at 1:30 P.M. on September 9, over WHAM, to start the fourteenth season the society has been on the air. The first subject was "Fifth Freedom—Free Choice of Physician."

The society proclaims its broadcast to be "the oldest continually produced medical broadcast in the world." The September program was the 552nd in the series, which will continue until June 29, 1945.

A new program of summer broadcasts on child health was inaugurated this season. The ten broadcasts were arranged by the Child Welfare Committee, of which Dr. Herbert C. Soule is chairman.\*

### New York County

One hundred and seventy-two students of the College of Physicians and Surgeons and the School of Dental and Oral Surgery of Columbia University were graduated at special ceremonies on September 28 at 11:00 A.M. in the McMillin Academic Theatre, Broadway and 116th Street.

Dr. Willard C. Rappleye, dean of the College of Physicians and Surgeons of Columbia University, spoke at a dinner for the senior class of the college, whose 124 members received their degrees. The dinner was given by the college's alumni association at the University Club, Fifth Avenue and Fifty-fourth Street.

The other speakers were Comdr. Gordon Bruce, who served two years on Guadalcanal with the Marine Corps, and John Kieran, newspaper columnist, whose son, James, is a member of the graduating class.\*

Dr. Marie Warner delivered a lecture entitled "Sperm Viability in the Female Genital Tract" on Thursday, September 14, 1944, before the meeting of the American Association for the Advancement of Science held at Cleveland, Ohio.

Thomas P. Fleming, M.S., librarian of the Columbia University College of Physicians and Surgeons, has been appointed assistant director of the libraries of the university.

Dr. George T. Pack was recently decorated by the president of Chile with the title of Grand Officer of the Order of Merit.

Frank S. Lloyd, Washington, D.C., executive officer of the Committee on Physical Fitness of the Federal Security Agency, has been appointed chairman of the department of hygiene of the College of the City of New York, succeeding Frederic A. Woll, Ph.D., who retired because of age on August 31.

Ivan C. Hall, Ph.D., since 1942 director of the central laboratory, contaminated wound project, subcommittee of surgical infections, National Research Council, formerly professor and head of

the department of bacteriology and public health in the University of Colorado School of Medicine, Denver, has been appointed professor and chairman of the department of bacteriology at the New York Medical College, Flower and Fifth Avenue Hospitals. He will succeed Laura Florence, Ph.D., who retired in September.

Dr. Otto Loewi, research professor in pharmacology at New York University College of Medicine, has been awarded the Cameron Prize in Practical Therapeutics of the University of Edinburgh in recognition of "his fundamental work on the chemical transmission of the nervous impulse," *Science* reports.

Dr. Joseph Jordan Eller will address the Waterbury, Connecticut, Medical Society at the Waterbury Club on November 9 at 8:30 P.M. The subject will be "Tumors of the Skin" (benign and malignant), with lantern slide demonstration.

Applications are now being accepted for the Lewis Cass Ledyard, Jr., Fellowship by the Society of the New York Hospital. Three thousand dollars will be available as a stipend to an investigator in the fields of medicine and surgery or in any closely related field and about \$1,000 for supplies or expenses of the research. Preference will be given to younger applicants who are graduates in medicine and who have demonstrated fitness to carry on original research of high order. Applications should be received by the Committee of the Lewis Cass Ledyard, Jr., Fellowship not later than December 15. It is expected that the award will be made by March 15, 1945. Additional information may be obtained from Dr. Eugene F. Du Bois, chairman of the committee, Society of the New York Hospital, 525 East 68th Street. The fellowship was established in 1939 by a gift from Mrs. Ruth E. Ledyard in memory of her late husband, Lewis Cass Ledyard, Jr., a governor of the New York Hospital.

Harlem soon will have its own "little red door" cancer information service at 2007 Seventh Avenue, where space has been leased by the New York City Cancer Committee. The office also will serve as Harlem division headquarters of the Women's Field Army of the American Cancer Society, according to Mrs. Francis J. Rigney, commander in Manhattan. Dr. John E. Moseley and Dr. Farrow Allen are cochairmen of the Harlem division.

Drs. Edith M. Quimby and Beverly C. Smith, of Columbia University College of Physicians and Surgeons, report in *Science*, August 25, on the use of radioactive sodium as an aid in the diagnosis of diseases of the circulation. The radioactive sodium also aids in the making of the prognosis and in evaluating the effect of treatment. It is made by bombarding sodium metaborate with deuterons in the cyclotron.

Circulation time is measured with this substance by the injection of a sterile solution into the arm; when blood containing the sodium reaches the foot a Geiger counter held against the sole clicks.

[Continued on page 2282]

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## MORE AMERICAN INGENUITY

Dr H L Ansbacher of Brown University, made the point that German military psychology approached its problem clinically

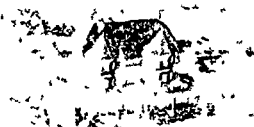
This is good when it can be carried out. American military psychology considered the approach impractical for an army of the size we decided to raise. Hence we concentrated on standardized tests with ratings made by trained observers, commanding officers under whom candidates served, or special boards

German experience seems to prove that the judgment of American psychologists was sound

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[Continued from page 2280]

It has been suggested that the substance also be used in a study of the acute type of frostbite suffered by aviators in short exposures to low temperatures, as well as of immersion foot.

The New York Diabetes Association announced on August 23 that it had taken title to the former Golden Rule Inn property on Mirror Lake four miles below Kingston, New York, and will convert the buildings into a camp for poor diabetic children of greater New York. Dr. George E. Anderson, Brooklyn president of the association, estimated that \$10,000 would be needed to convert the buildings to meet the requirements of a diabetic children's camp, according to the *New York Times*.

#### Ontario County

"Hysterectomy" was the subject of a paper by Dr. Harry M. Smith given on September 1 before members of the Canandaigua Medical Society at a meeting at the Yacht Club. Dr. Smith also was host, dinner being served to nine, including Dr. Frederick C. Robbins and Dr. Ludwig Mayer, guests.

Dr. C. Harvey Jewett reported on the poliomyelitis conference held in Rochester under the auspices of area medical societies, including the Ontario County group, and the State Medical Society and State Health Department.

The October meeting took place on October 6, with Dr. A. W. Armstrong as host and Dr. Margaret T. Ross as reader.\*

#### Queens County

The annual joint meeting of the county society and the Queensboro Tuberculosis and Health Association was held on September 28.

The meeting was opened with remarks by Dr. James R. Reuling, Jr., president of the Queensboro Tuberculosis and Health Association. An address entitled "Medical Observations in the Middle East and Africa" was delivered by Rear Admiral Charles S. Stephenson, (MC), USN. The discussion leader was Dr. Ernest L. Stebbins, New York City Commissioner of Health.

The Friday Afternoon Lecture on October 27 will be "The Treatment of Infections of the Hand," by Dr. David Goldblatt, assistant professor of surgery, Columbia University.

#### Schenectady County

The regular monthly meeting of the county society was held at the Ellis Hospital Library, Schenectady, on October 3 at 8:30 p.m. Dr. George W. Thorn, Hersey Professor of Medicine at Harvard Medical School, spoke on "Diagnosis and Treatment of Gout."

#### Steuben County

The Steuben County Bar Association and the Medical Society of the County of Steuben held a joint luncheon meeting at the Hotel Sherwood, Hornell, on September 11. The program was devoted to the medical and legal problems in paternity cases.

Dr. Philip Levine, director of the Biological Division, Blood-Testing Laboratory of the Ortho Research Foundation, Linden, New Jersey, spoke on the "Medicolegal Consideration of Blood Groups in Paternity Cases." Dr. Levine is known internationally as one of the foremost authorities on blood groups.

Attorney W. Earle Costello, of Corning, spoke on the "Legal Aspects of Paternity Cases."\*

#### Westchester County

Boyden Roseberry, formerly director of the medical department of the Children's Aid Society of New York, has succeeded James E. Bryan as executive secretary of the Westchester County Medical Society.

Mr. Roseberry began his professional career as a school-teacher in Singapore. In his work with the Children's Aid Society he supervised their two convalescent homes in Chappaqua and Valhalla, and was a member of the Westchester Hospital Association.

Graduated from Vanderbilt University in 1930, he took postgraduate work at Columbia University.

#### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Wallace J. French	85	Buffalo	August 30	Pike
Charles F. Goetsch	33	L.I.C. Med.	July 21	Flushing
Clarence W. Graser	49	Buffalo	August 20	Buffalo
Emilio L. Hergert	71	L.I.C. Hosp.	September 13	Brooklyn
Bernard Hohenberg	72	Univ. South Tenn.	September 6	Manhattan
Norman R. Ingraham	65	Jefferson	September 20	Manhattan
Clarence King	83	Buffalo	September 3	Franklinville
John J. Lloyd	65	Virginia	September 22	Rochester
Caesar P. McClendon	63	Michigan	August 31	New Rochelle
Hugh S. McKeown	49	Baylor	September 14	Manhattan
Douglas C. Moriarta	85	Albany	September 12	Saratoga Springs
Allen S. Morris	43	Buffalo	August 31	Buffalo
Emil A. Muller	67	P. & S., N.Y.	June 13	Glen Cove
Harry H. Patrie	53	Pennsylvania	September 12	Brooklyn
Edward C. Podvin	68	Albany	September 27	Bronx
Leslie B. Roberts	28	N.Y. Univ.	August 3	Brooklyn
David K. Shivelhood	37	Jefferson	September 11	Manhattan

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wanting money, see. . . Say, listen, bub, you ain't  
going to print me name, are you? De parole board  
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# Hospital News

## New York Hospital Fund Starts Annual Campaign

WITH \$1,554,931.56 as the immediate need, and with the sphere of its service being expanded to meet postwar problems and demands, the United Hospital Fund of New York opened its sixty-sixth annual campaign on September 25, at a dinner in the Hotel Commodore. The appeal will continue through November 4.

The participating members of the city-wide appeal are seventy-seven voluntary hospitals, women's auxiliaries, medical social service committees, and the Visiting Nurse Association of Brooklyn.

Four thousand volunteer workers are doing the soliciting under the direction of James S. Adams, general chairman of the campaign. A small booklet entitled "Tomorrow One of These Seventy-seven Hospitals May Be Your Friend in Need" is being used by the campaign workers to carry to the people of New York City the story of the volunteer hospitals' services.

The booklet reveals that more than half of the hospital care in this city is provided by the voluntary hospitals, and about half of that care is provided free or at less than cost.

Last year, the booklet points out, 3,404,799 patient-days of free or part-pay care were given in the seventy-seven voluntary hospitals participating in the United Hospital appeal. In the outpatient departments 3,373,704 visits were made.

The money raised annually by the United Hospital Fund, together with the money contributed to the voluntary hospitals that are members of that Fund by employee groups, firms, and corporations through

the Greater New York Fund, helps to assure hospital care when needed for all New Yorkers, regardless of race, creed, or ability to pay, the booklet declares.

Speaking of the contribution made to the war effort of the nation, the booklet says, "War has taken from our voluntary hospitals doctors, nurses, technicians, medical social workers, and other essential personnel, but those left at home are carrying on, meeting wartime rehabilitation problems, and doubling up on work to serve in case of sickness or accident."

To a considerable extent the problem of the loss of personnel has been solved by the service of some 10,000 home-front volunteers. The problem of increased cost due to war was partially met in 1943 by an encouraging increase in the amount and number of voluntary contributions."

The total income of the seventy-seven participating hospitals is reported as \$49,759,423.35, and the total cost of services provided as \$51,314,354.91. Therefore, the booklet states, the amount to be sought from the public this year amounts to \$1,554,931.56.

Roy E. Larsen, president of the United Hospital Fund, opened the program at the dinner. The guest speaker was Lt. John Mason Brown, USNR, who recently returned to this country after taking part in the invasions of Italy and France.

More than a thousand of the persons who have volunteered as campaign workers attended the dinner.



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to conquer emotions, the habit, mouth centered make up which starts the habit and makes it strong. That is why people who break off smoking are likely to find themselves biting their nails, over eating and gaining weight, biting their lips like the mental patients just described, or—believe it or not—going on a kissing spree!"

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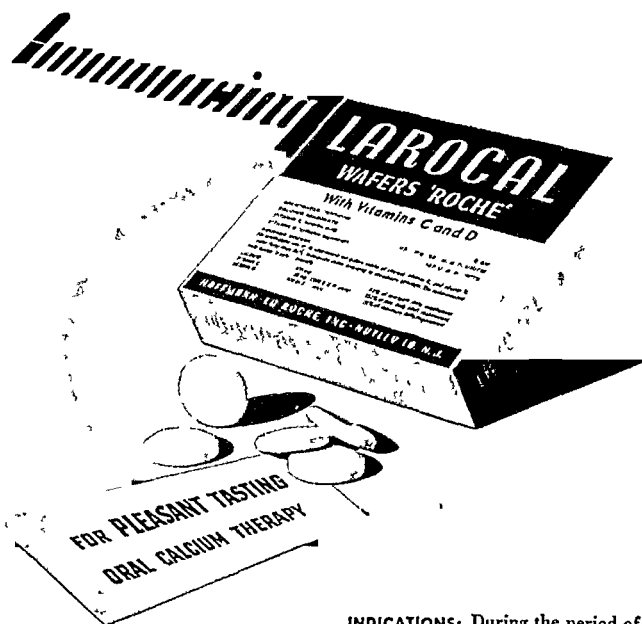
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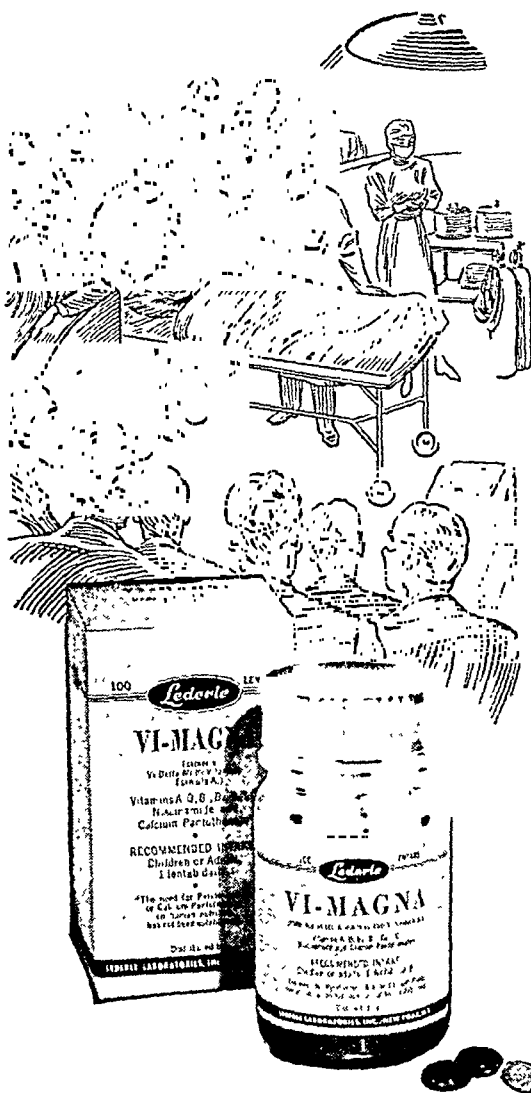
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# NEW YORK STATE JOURNAL OF MEDICINE

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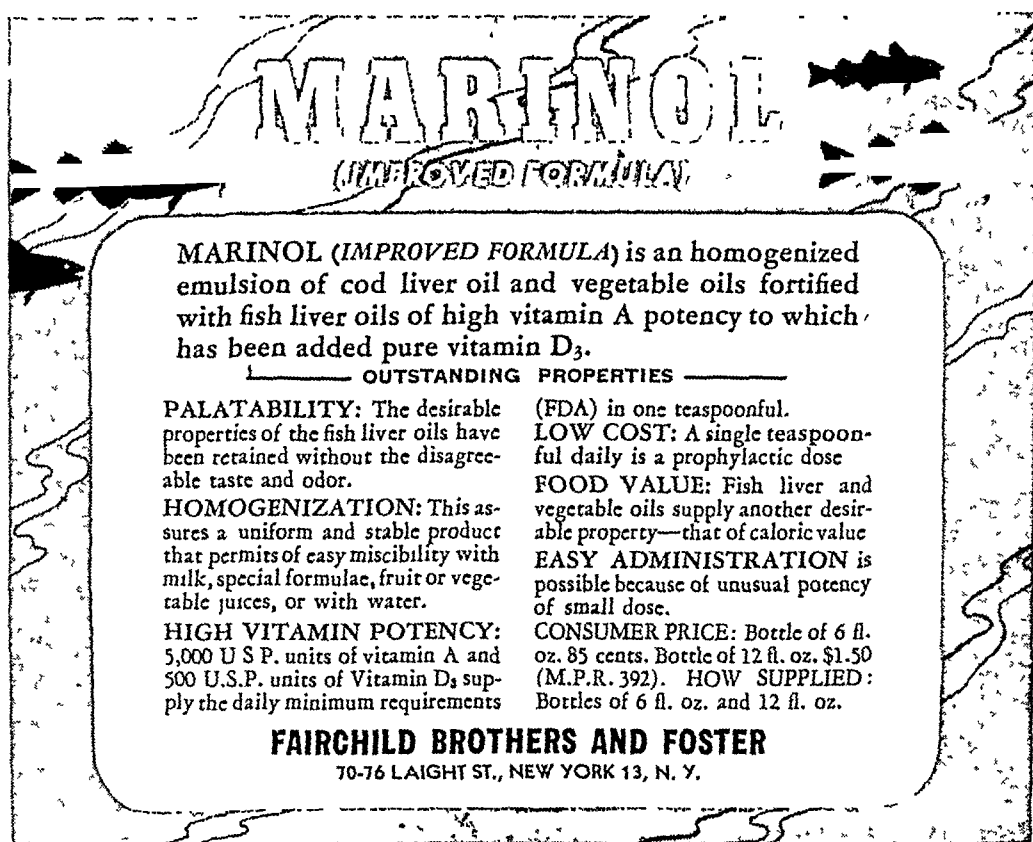
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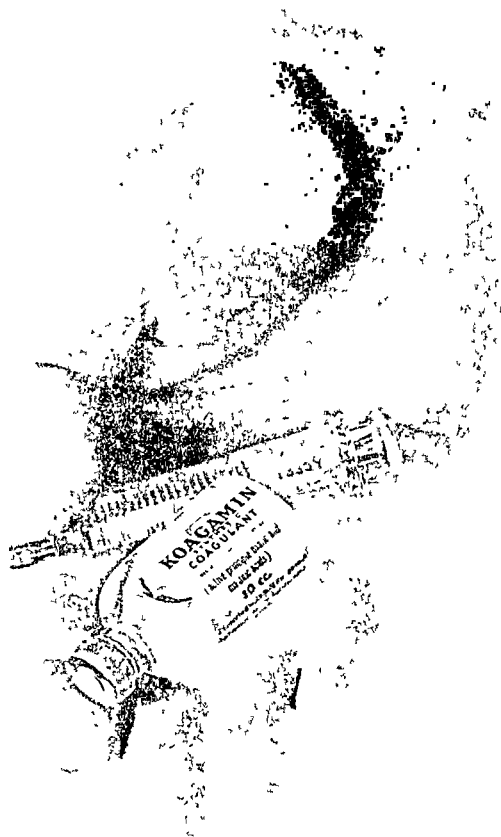
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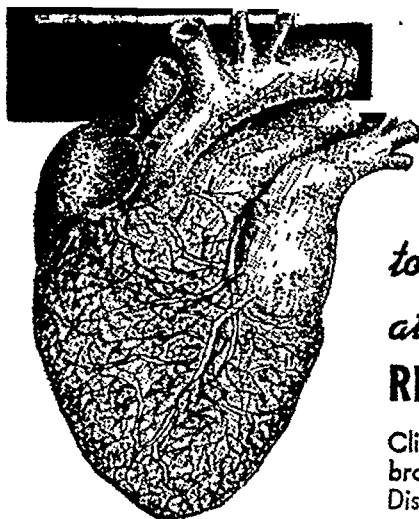
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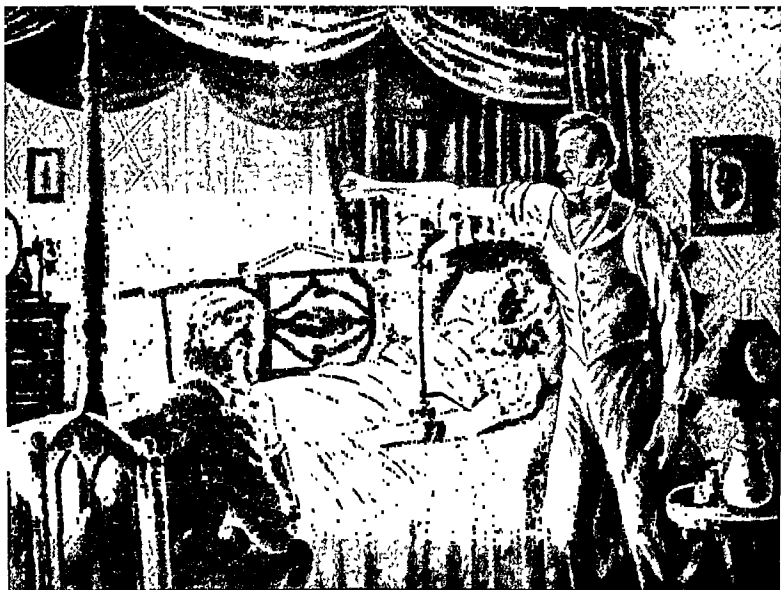
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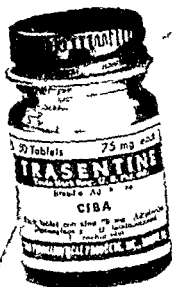
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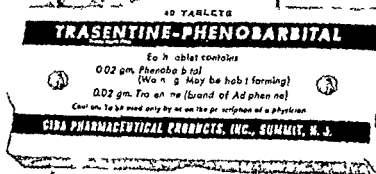
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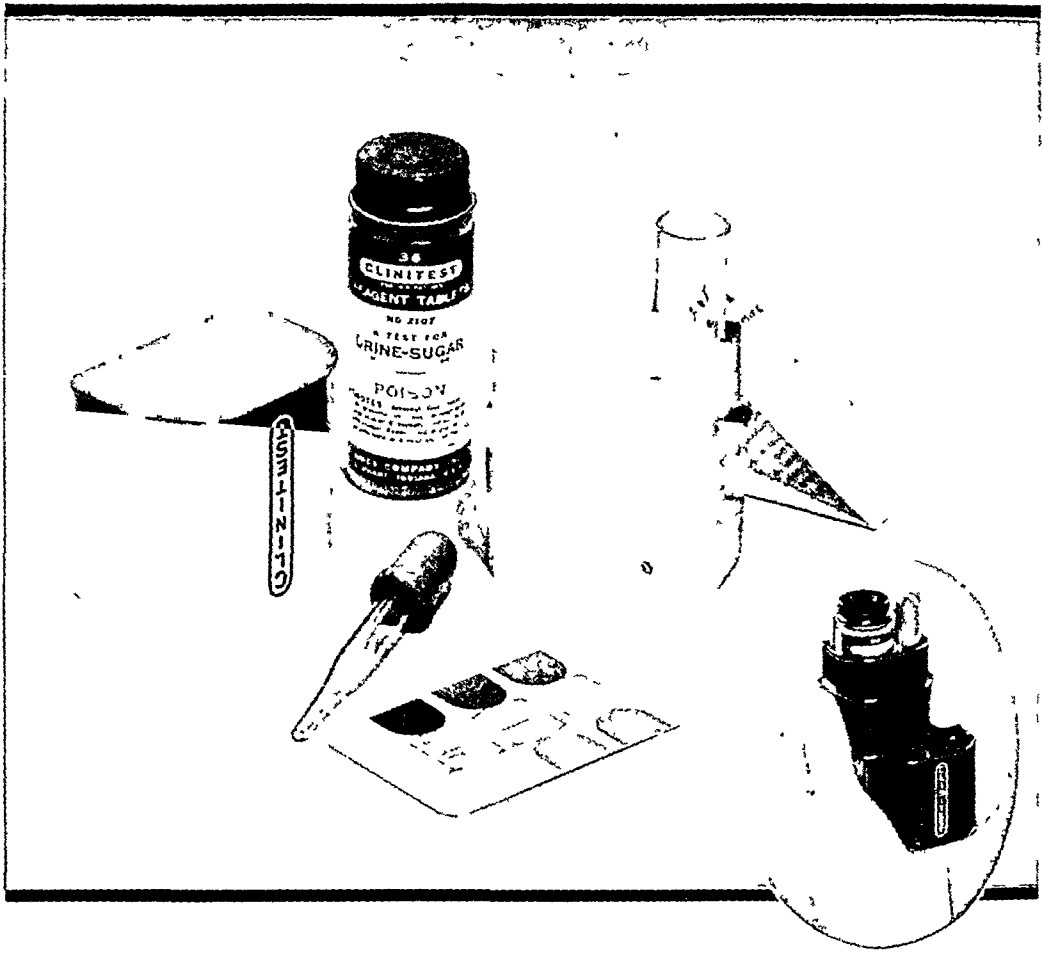
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"... at least from 200 to 300 grams of protein is needed for replacement alone. One must give the patient as much food as he can take . . . give him a good protein, one that contains all of the essential amino acids" (Elman, R.: *Physiologic Problems of Burns*, *J. Missouri M. A.* 41:1 [Jan.] 1944.)



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while she sleeps**

The striking success of Paredrine-Sulfathiazole Suspension in nasal and sinus infections is largely due to its prolonged bacteriostatic action. When the Suspension is administered on retiring, for example, sulfathiazole can often be observed on infected mucosa the next morning—conclusive evidence that bacteriostasis has persisted all night long.

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Other outstanding advantages:

1. The Suspension does not irritate or sting, because its pH is slightly acid, and identical with that of normal nasal secretions.
2. The Suspension does not produce such central nervous side effects as insomnia, restlessness and nervousness.

Smith, Kline & French Laboratories, Philadelphia, Pa.

## PAREDRIE-SULFATHIAZOLE SUSPENSION

1 *Prolonged*  
bacteriostasis

2 *Non-stimulating*  
vasoconstriction

3 *Therapeutic*  
pH—5.5 to 6.5



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while she sleeps**

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1 *Prolonged*  
bacteriostasis

2 *Non-stimulating*  
vasoconstriction

3 *Therapeutic*  
pH—5.5 to 6.5



No feeding  
directions  
furnished to the lady

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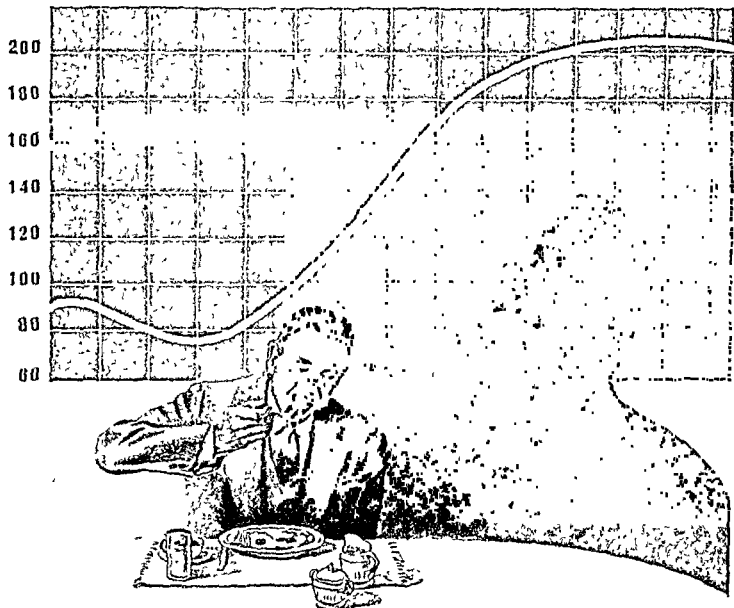
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With purchases restricted it is readily apparent that substantial shoes, capable of reconstruction or easy adjustment, should be prescribed. For all practical purposes, Pediforme footwear may well be considered in shoe therapy.

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# 'Particularly valuable'

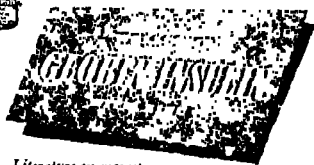


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Diabetics of this type who are well controlled throughout the twenty-four hours with a single injection of 'Wellcome' Globin Insulin with Zinc, depend for this control on Globin Insulin's rapid onset of action and sustained day-time effect. Its diminishing action at night tends to minimize nocturnal insulin reactions

'Wellcome' Globin Insulin with Zinc is a clear solution and, in its freedom from allergenic reactions, is comparable to regular insulin. It is accepted by the Council on Pharmacy and Chemistry, American Medical Association, and was developed in the Wellcome Research Laboratories, Tuckahoe, New York. U. S. Patent No. 2,161,198.

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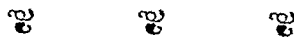


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*Cardiologist*

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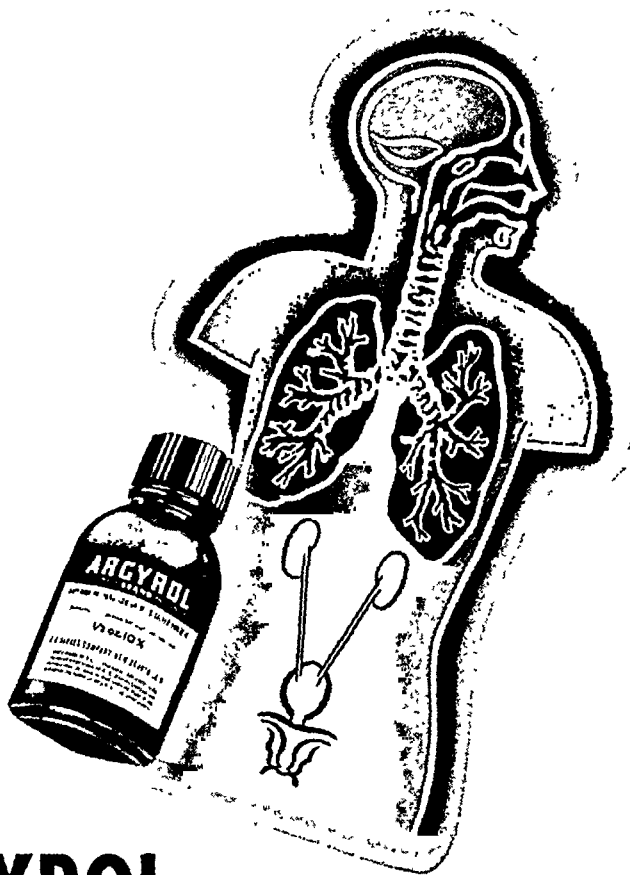
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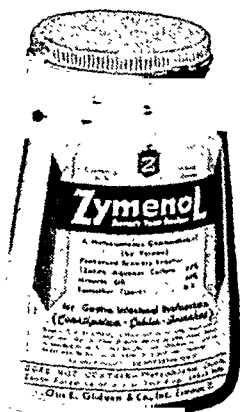
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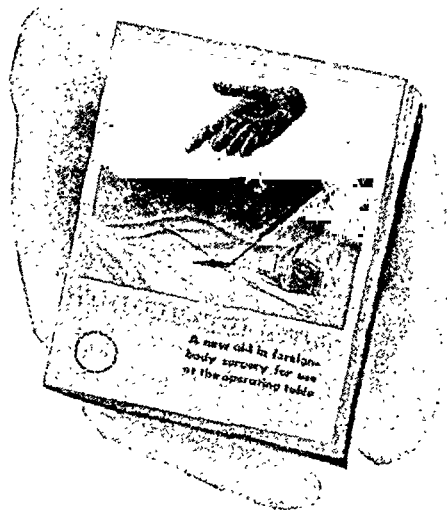
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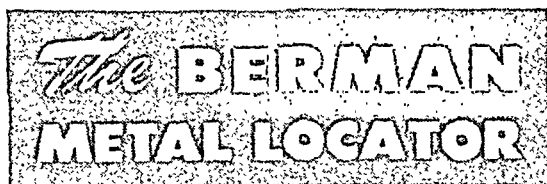
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Described in Jrl. of A.M.A., Jan. 9, 1943, vol. 121, pp. 123-125;  
 Amer. Jrl. of Surgery, Sept. 1944, vol. LX5 No. 3, pp. 373-380;  
 Archives of Ophthalmology, Mar. 1944, vol. 31, pp. 207-210.



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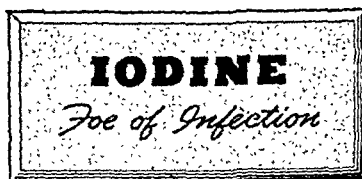


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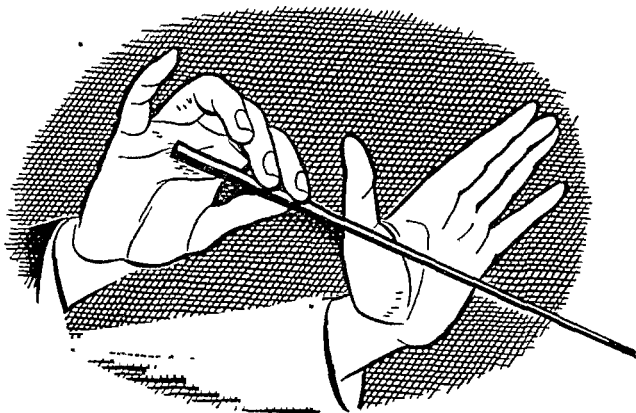
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\*The Relative In Vitro Activity of Certain Antiseptics in Aqueous Solution—Robert N. Nye, Boston, Journal of A.M.A., Jan. 23, 1937, Vol. 108, pp. 280-7.



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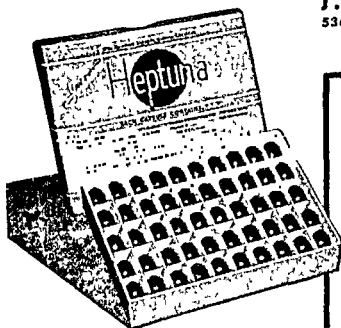
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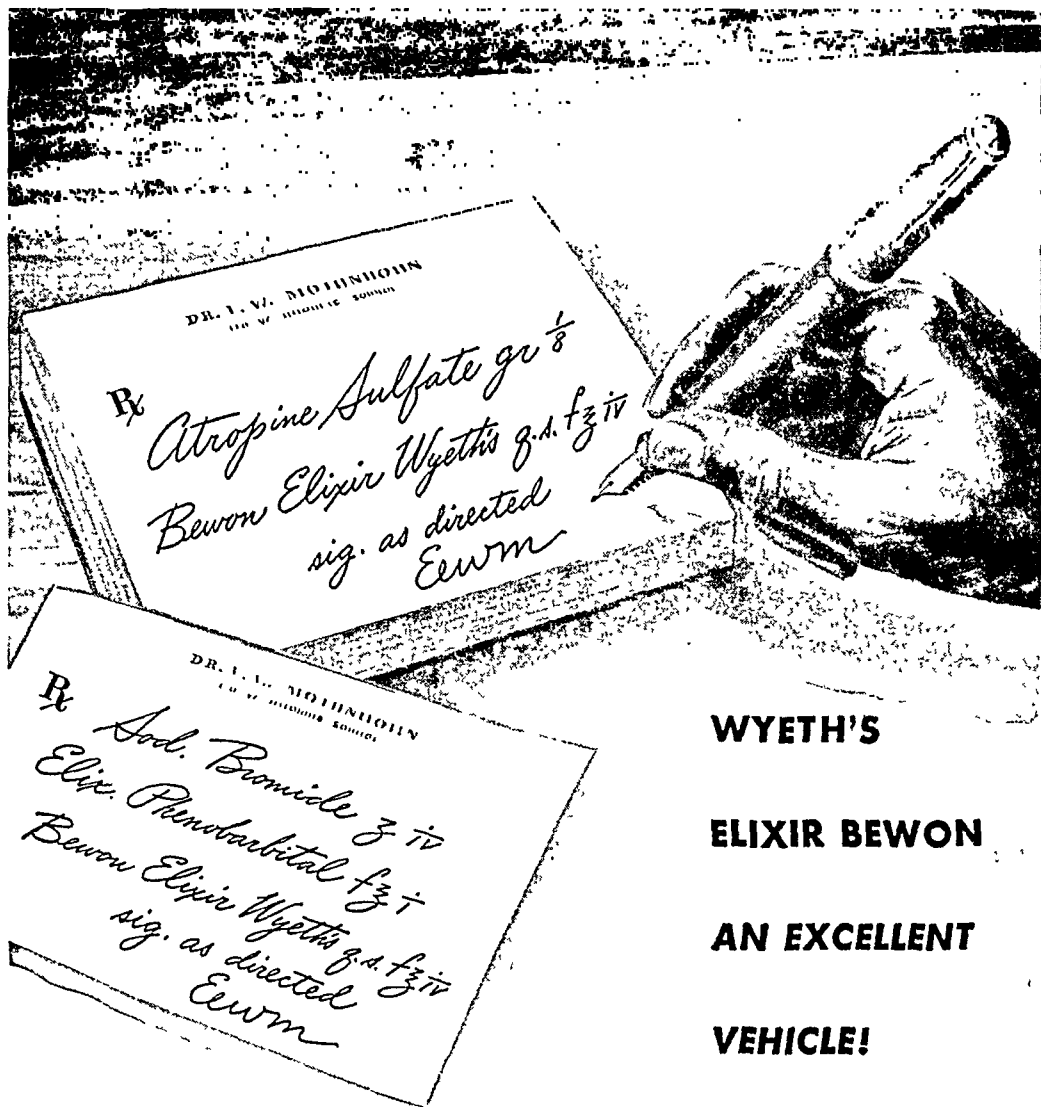
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## Editorial

### Plain Talk, IV

Speaking before the Fifth District Branch Meeting of the Medical Society of the State of New York, at Utica, September 19, 1944, President Herbert H. Bauckus said, in part, "Man in his better moments has sympathized most hopefully with the proposition that all men are created free and equal. In the practical application of this thought is found again and again the strength and the faith that has nurtured our liberty—that has made America great. So, too, do we of the profession of medicine adhere steadfastly to the belief that all who live shall benefit alike according to the skill, ability, and resource of the highest developments in medical science available today. . . ."

President Bauckus called upon the responsible agencies of government charged with the responsibility of providing for the needs of the economically unfortunate to secure for these the same quality of medical care available to others.

"That this group, doubly unfortunate when ill, do not secure it, is not our fault—rather it is the result of the effort of the Boards of Social Welfare to buy cheap medical care. We do not want the product adulterated, no matter who pays for it. Political welfare medicine, cheap and hastily

conducted school examinations, crowded and undersupplied clinics—we do not want them. Why do those outside of the medical profession insist that we shall have any such impersonal and poor medical care in this richly endowed America of ours? . . . ."

Why, indeed? Because public business is that way in the nature of things; public officials, hard-working, ill-paid for the most part, some appointed for political reasons rather than for their knowledge, always under critical fire for their expenditures of public monies, are not in a position to do as they please. Restrictions laid down by higher authority govern, often under penalty for noncompliance of loss to the communities or districts or states of monetary grants-in-aid or rebates of tax monies. This is the curse of subsidy. This is the compelling reason why physicians look with disfavor upon the tendency to expand schemes for government or government-controlled practice of medicine.

"Our interest in preventive medicine likewise calls for the highest standards. We educate against epidemic disease, careless living, dangerous working—we warn against gambling with health and disease.

"Why do we need to have so many or-

ganizations to cope these many weary years with the problems of insanitation and preventable disease? I think a study of this question will reveal three main causes: (1) lack of leadership in the profession of medicine in public health procedures and their successful application to a properly informed people; (2) inertia and lack of carry-through to the use of our best medical knowledge on the part of officials of government—executive, law-making, finance, judicial; (3) health departments and boards of social welfare hampered by undermanned personnel, lack of funds, and political considerations.

"Our part, then, is to assume to the full our rightful leadership in the entire fields of the medical arts and sciences. No others are trained to understand or do as well. We ourselves do better. What does it profit anyone to keep with us this great preventable scourge, tuberculosis?

"I have no patience with those who quote statistics of 100 deaths being relatively unimportant when compared to 1,000 deaths. There is no place for coldness, and every place for warmth and mercy, in modern medicine."

Warmth and mercy, compassion, tenderness, the human relationship of one individual to another, the practice of medicine, or nursing! Can anybody visualize a Federal Warmth and Mercy Administration? A State Department of Compassion and Tenderness? The strength of government should lie in its impersonality, in even-handed administration of justice under the law, in the honesty and impartiality of its executives, in the incorruptibility of judges, in the accessibility of the courts of law to all.

Because there is this difference in the very nature of constitutional government and the practice of medicine, the government has no place, and, if constitutional, a government of laws, no sympathy, by definition, with the practice of medicine. It should have, quite properly, regulatory powers over the practice of medicine, provided these powers are wisely exercised under statutes which recognize the freedom necessary to the proper exercise and development of that which is partly a science and partly an art. But, as Dr. Bauckus says, leadership must come from within the informed profession. With assistance, not

meddling, with lawful regulation, not control, by government. Failure by government to recognize these limitations, failure to exercise them, is to debase a profession, to demean government, and to substitute coldness for warmth, impersonality for a necessary humanism quite proper in the practice of medicine.

"To provide for the cost of medical care is a problem we have earnestly and considerately discussed with society in general and the individual patient in particular. We believe that our efforts to found voluntary prepayment medical care insurance plans in New York State are gradually bearing fruit. The establishment of a medical care insurance bureau with adequate personnel under the aegis of the Medical Society of the State of New York is a decided forward step, and evidence of our faith in the public appreciation of independent medicine.

"Any sane consideration of the cost must put hospital and medical care among the foremost needs. Food, clothing, shelter, medical care—they are essentials and not to be entrusted to the vagaries of chance. Our leadership must be constructive in the emphasis upon liberal public education in preventive medicine and the care of the mind and body in health and in disease. We cannot delegate our responsibility in this regard. . . ."

We have, however, much to learn. If we cannot delegate our responsibility, we must exert our authority within the profession to enlarge our plans for voluntary prepayment medical care insurance. Our own profession must be educated, and quickly, to acceptance of this responsibility and to the necessity for the widest possible coverage of the population. It is hardly practicable, even if it were desirable, to insure one-half the employees in an industrial plant. Which of us would insure one-third of his automobile or one-sixth of his house?

Public appreciation of independent medicine seems to be evidenced by its support of the practitioners and the institutions of that kind of medicine. But there is much danger of alienating public support and confidence by too great independence. There is a happy medium and we would do well to take public need as a criterion and proceed accordingly.

## For the Record

Just for the record, we reproduce from the sources noted the pertinent portions of the national party platforms that relate to medical care, however remotely

*Republican Platform (under "Security")—New York Times, June 28*

1 Extension of the existing old age insurance and unemployment insurance to all employees not already covered

2 The return of the public employment office system to the State at the earliest possible time financed as before Pearl Harbor

3 A careful study of Federal-State programs for maternal and child health, dependent children, and assistance to the blind with a view to strengthening these programs

4 The continuation of these and other programs relating to health and the stimulation of Federal aid of State plans to make medical and hospital service available to those in need without disturbing the doctor patient relationship or socializing medicine

5 The stimulation of State and local plans to provide decent low-cost housing properly financed by the Federal Housing Administration or otherwise

when such housing cannot be supplied or financed by private resources

*Democratic Platform (Section IV)—New York Times, July 21*

There is no direct reference to health security except for this in Section IV

"We assert that mankind believes in the Four Freedoms"

"We believe that the country which has the greatest measure of social justice is capable of the greatest achievements"

Our membership will have come to its own conclusions, we hope, ere this and will be prepared to support what it believes to be for the best interest of the Nation, regardless of party

In these times that try men's souls, times that sear and burn, men seek the truth, discard the chaff, and move more directly to the goal of their aspirations than at any other time

Men of medicine will do their part as they always have in their capacity first as citizens, and then as physicians

## Cheerful News, But—

In spite of a general increase in lawlessness reported from many sections of the country during the war period, the death rate from homicide has been steadily declining, according to a well-informed source.<sup>1</sup> In view of the emphasis which has been placed on the alleged increase in juvenile delinquency, and the widespread opinion that wartimes tend to increase delinquency not so juvenile, it is encouraging to read that

"this drop in mortality is not merely a wartime phenomenon, the homicide record of the United States has been improving without interruption for more than a decade. The death rate from this cause fell from 9.7 per 100,000 population in 1933, when nationwide data first became available, to 5.8 in 1942, a decline of about 40 per cent. More recent data have not yet been released for the country as a whole, but reports from various sources, including the experience among the many millions of Metropolitan industrial policyholders, indicate that the homicide situation has continued to improve since 1942. It is quite likely that the current rate is the lowest ever experienced in this country."

Yet before we take too hopeful an attitude, it is as well to remember that homi-

cides took more than 7,700 lives in the United States in 1942

Since 1933, it is said that the homicide rate has shown a downward trend in general, and in forty-one states (including the District of Columbia), the decline has amounted to 25 per cent or more between 1933-1934 and 1941-1942, in twelve States the decrease was 50 per cent or more.

We fail to note the Empire State listed among those arranged according to magnitude of relative decline. But on the other hand, it is not listed either among the States in which the homicide rate is well above the national average, and which, commendably, have shown marked reductions in mortality. Physicians are interested in the reduction of the mortality rate from whatever cause. They will note with interest that

"The general reduction in murder and manslaughter in this country may be attributed to a number of factors. There is reason to believe that the tightening of restrictions on the sale and possession of firearms has had a salutary effect. Thus, in 1933 firearms accounted for 65 per cent of the homicides in the United States, but by 1942 the proportion had decreased to 54 per cent. Law enforcement agencies—Federal, State, and local—have, in gen-

<sup>1</sup> Statistical Bull. Met. Life Ins. Co., September 1944

eral, been functioning more efficiently in combating the criminal element in our population. The Federal Bureau of Investigation deserves special mention for its effective attack on racketeers and gangsters. But this is by no means the whole story, or even the major part of it. Professional criminals, studies show, are responsible for a fairly small proportion of the homicides. A majority of such killings arise over petty disputes and quarrels or from jealousy or thwarted love."

Among the other causes to which reduction may be attributed, says the same source,

"It is probable that improvements in social conditions have played their part. The clearance of slum areas, which frequently breed lawlessness, and increased facilities for wholesome recreation, must have had some effect. The fact that education has become more widespread is another factor to be taken into account, because investigators have found that a large proportion of those who commit homicide have had very limited schooling. Community agencies have helped to prevent homicide by

giving increased attention to the care of problem children and adolescents. . . ."

On the whole it seems probable that continued restriction in the sale and use of firearms and ammunition would provide a simple and effective means of continuing and perhaps improving the record. Improvement in social conditions and education are relatively slow processes; slow but sure. Restriction in the sale and use of firearms and ammunition is a measure which all physicians could approve and which we could and do recommend to the thoughtful consideration of the Legislature. We see no reason why the Empire State should not set an example in this as it has in so many other fields. Surely we have had enough of unavoidable homicide forced on us. Why make a bad matter worse?

### Penicillin for Sulfonamide-Resistant Gonorrhea\*

Penicillin has been made available by the State Health Department to all physicians for the treatment of sulfonamide-resistant gonorrhea. It may be secured by application to the nearest district State Health Officer, or, in some of the larger cities, to the local health officer. Unfortunately, the high cost of penicillin prohibits its distribution in the informal manner in which the sulfonamides have been made available. The

district State Health Officer has been requested to ascertain that a case report for gonorrhea has been or will be submitted for each ampule of the drug, that the infection has been resistant to the sulfonamides, and that the contacts of each case have been identified, in order to forestall reinfection, which is common after penicillin therapy. Patients will be questioned for the names of their contacts, and the persons thus found will be brought to examination by the State and local health departments.

As an additional measure, posters are to be placed in the washrooms of taverns and pool halls, in an effort to influence persons with untreated gonorrhea to report to physicians for diagnosis. (See Chart 1.)

The format and content of this poster are designed to attract particularly those people who commonly seek the quack or attempt self-treatment of gonorrhea. For this purpose the poster must be brief and dramatic and hence will be misunderstood by some. It is thought that the commonest misinterpretation of the text of the poster at the left will be that treatment as well as the drug is free. Qualification to preclude this misapprehension is likely to curtail the utility of the poster. The assistance of the practicing physician in this effort to bring to medical care that fraction of the population least frequently seen in the physician's office, but most important in venereal disease transmission, is solicited.

CHART 1

**FREE    Miracle  
          Drugs**

**(Penicillin, Arsenicals, Sulfa Drugs)**

**for**

**Gonorrhea and Syphilis**

**See**

**Your Doctor**

**or**

**Health Department Clinic**

**Get CURED Now**

**New York State Department of Health**

\* Release from the New York State Department of Health.

# AN EVALUATION OF CONTINUOUS CAUDAL ANALGESIA

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SINCE 1942 we have published, individually and in collaboration with our associates several articles on continuous caudal analgesia which have dealt mostly with our observations and experience in the use of this method in vaginal delivery, cesarean section and gynecologic surgery. We have particularly stressed the "don'ts," the "stop, look, and listen" signs which must be observed if successful caudal analgesia is to be obtained with safety for both mother and child. We wish to reiterate these cautions, and although we feel that this technique has passed beyond the experimental stage in the hands of trained individuals, inexperienced physicians must be cautioned continually.

As we have gradually extended the scope of its use and gained further knowledge of this technique, we have endeavored to give the medical profession our unbiased opinion of this procedure in the relief of pain.

After employing this method in several thousand instances we are convinced that teamwork between the anesthetist and the obstetrician is essential for the proper accomplishment of this technique. The many problems that have developed in this study could not have been solved in any other way than through the constant cooperation of these two hospital departments. Because of the shortage of personnel, trained anesthetists in particular, many clinics have hesitated to initiate the technique of continuous caudal analgesia and we believe rightly so because we have consistently contended that this is a procedure to be used only by trained individuals in well-equipped and well-staffed institutions.

When Hingson and Edwards first startled the medical profession with their preliminary report, the lay publicity given to their work created a great furor. Since that time we have been endeavoring to study and adjust the many problems which have arisen so that this work might be placed on a foundation which will not only be permanent as far as medicine is concerned, but will safeguard the laity from its misuse.

Continuous caudal analgesia, which was not originated on the pages of any popular lay magazine, was scientifically designed to relieve the pains of labor and delivery. A single expert movement of a physician's hand provides the bulwark which divides on one side comfortable labor and delivery from the agony of travail on

the other. The primary duty of the physician is to relieve the processes of pain. The second duty, not unlike the first, is to allay the processes of fear. Pain can be brought to a frightful nearness through the telescope of fear. Fear can be greatly accentuated and magnified through the microscope of pain. These two processes are pathologic psychic gemini, which when present in an uncontrolled form may periscope into the sensorium an irreversible psychic trauma. The control of pain is achieved by two methods: (1) the anatomic approach—that is, by blocking pain impulses at their sources, as in local, spinal, regional anesthesia, and caudal analgesia, (2) the encephalic approach—that is, by obliterating pain at its site of interpretation in the central nervous system through various forms of general, intravenous, and rectal anesthesia. The patient in whom fear is completely controlled is the ideal one for the use of the anatomic approach. The one in whom fear is uncontrolled can be relieved usually more satisfactorily by one of the forms of general anesthesia or amnesia. We have demonstrated in thousands of instances that an adequate dosage of a local analgesic properly injected into the sacral canal, through a single needle, will produce sufficient nerve block for cholecystectomy, cesarean section, appendectomy, or normal delivery. It is an untenable thought to us that the jeopardizing seven needle technique of sacral block still has a place in medicine for such minor procedures as hemorrhoidectomy, when analgesia of the lower two-thirds of the body can be produced by the use of just one of those needles.

The physiology of labor and delivery observed by the midwife and interpreted in our existing textbooks on obstetrics is completely altered since the inception of successful continuous caudal analgesia. In the presence of forceful uterine contractions the progress of labor through the first stage is dramatically shortened. The softened cervix, oftentimes within the hour, dilates from 3 to 5 cm. to 10 cm. with an associated rapid advancement of the presenting part to the perineum. If the obstetrician in these cases performs his function properly, a baby will be born which cries the moment its nose crosses the perineal floor, the third stage of labor will be shortened and simplified to the point that in many instances third-stage hemorrhage will be unbelievably small.

The convalescence of the patient who has been properly managed under caudal analgesia pre-



sents a reduced minimum of morbidity. The rapid involution of the uterus, the return of the cervix to the prepregnant state, the good muscular tone of the perineum at the six-week check-up period, have convinced us that postcaudal-analgesia parturients more nearly approach the nulliparous state than those managed under other technics. This finding has been substantiated by the observations of Dr. Francis R. Irving of Syracuse University.

In the phylogenetic development of the human species, there is an axiom in anatomy which scientists and physicians have used to advantage; namely, the *Ascensus Cordae Spinalis*. At the third month of fetal life the spinal cord, surrounded by the spinal fluid and meninges, extends the full length of the anlage of the vertebral column. The conus medularis, or the bulb-like termination of the neural axis, in the three-month fetus as in the quadruped mammals extends inferiorly to the sacral hiatus. During each succeeding month of intrauterine life until adulthood has been reached there is a relative ascensus of the spinal cord as the somatic vertebral column develops more rapidly caudad.

By the time the infant has reached the second month of life the spinal cord has receded and terminates at the fourth lumbar segment. At the age of five years the conus medularis is found opposite the third lumbar segment. At the age of 11 years the conus medularis lies opposite the second lumbar segment. In adult life the spinal conus medularis lies opposite the first lumbar segment, and in unusually tall individuals the ascensus has proceeded to more thoracic vertebral segments. Conversely, dwarfed individuals have spinal cords and dural sacs extending more inferiorly.

J. Leonard Corning, of New York, took advantage of this phenomenon to produce the first spinal anesthetic in 1885. Quincke utilized this information to produce the first diagnostic lumbar puncture in 1891. August Bier, of Kiel, Germany in 1898 combined the technic of the latter with the discovery of the former to produce the first spinal anesthesia in surgery, only after he, with temerity, had his own subarachnoid space injected with 20 mg. of 1 per cent cocaine solution to observe its effects.

During the ascensus the spinal cord sluggishly retracts the paired segmental nerves in the lumbar and sacral regions into the cauda equina. The dura mater is also relatively retracted as the sacral segments continue to grow beyond its inferior extremity at usually the first or second sacral spine. The osseous neural canal of the remainder of the sacrum comes to lie outside and beyond the dural sac, and hence becomes continuous with the peridural space. Sicard

and Cathelin, in 1901, took advantage of this fact to produce the first nerve-block experiments through the approach of the sacral hiatus.

The charm of the tunnel within the sacral canal enchanted the Greek anatomists to believe that the sacrum or the "sacred bone" became at night the sepulcher of the soul during sleep. This analogy closely approximates the truth, when we consider that through the sacrum traverse the nerve fibers controlling locomotion, micturition, defecation, parturition, and reproduction. Through the afferent pathways run the impulses of pelvic and sciatic sensation and pain.

Thus a study of the osteology of the sacrum, the neurology of the segmental spinal nerves, the physiology of the pelvic viscera, and the pharmacology and anesthesiology related to the control of pain in these organs seems appropriate.

During the last three years we have, in co-operation with J. Parsons Schaeffer, dissected the spinal cords, peridural spaces, and sacrum of 241 cadavers. We have observed that the anomalies of the sacrum are more prevalent than those found in any other bone in the body. Trotter and Letterman, in a study of more than four thousand sacra in the Washington University School of Anatomy, and in the Western Reserve University anatomic collection group, have found the more common anomalies in the following ratios:

Twenty-two per cent of all sacra studied had accessory openings in the roof. More than 11 per cent had a bony defect at the superior pole produced by a failure to close by the first and second, or first, second, and third dorsal arches. Eight per cent produced bony defects in the inferior pole with a failure to close of the lower three, or lower two dorsal arches. Five tenths or 1 per cent of female sacra, and 2 per cent of male sacra exhibited no roof at all.

Recently, another anatomic study has revealed the absence of sacral corpora, or a hemisacrum with an associated sacrocele in six patients. All of the latter group were first diagnosed as ovarian cysts. Observation, however, revealed the real pathology. All of the patients died of meningitis. Various investigators have discovered that anomalies of the human sacrum are from four to six times more frequent in the male than in the female. For this favoritism toward our work we can find no fault with nature.

In 5.5 per cent of 2,600 sacra, Trotter and Letterman have determined that the insertion of the recommended sizes of caudal needles is practically impossible because of osseous obliteration of the sacral canal; diminished antero-posterior diameter also precludes the use of caudal analgesia.

The identification of the sacral hiatus through the recognition of topographic landmarks is of cardinal importance in the successful application of this technique. A failure on the part of the physician to observe this warning will develop into an insurmountable difficulty for the doctor, and an irreparable hazard to the patient. For example, in our postgraduate medical course twenty-eight of three hundred sixty physicians inserted caudal needles in such a manner as to bypass the coccyx and enter the rectum. One physician in a large university hospital, performing his first caudal block, inserted the needle through the rectum, through the vaginal wall, through the cervix, through the baby's parietal bone, and into the cortex of the brain, where he lethally deposited the dose of the local anesthetic. Obviously, special training is necessary to perform this difficult technique. The inferior tip of the coccyx, the sacrococcygeal articulation, the sacral cornua with their projecting tubercles and the palpable depression of the sacral hiatus should be identified by the anesthetist before he attempts the introduction of the needle. Ninety per cent of the sacral hiatus lie at the intersection of the superior pole of the intergluteal crease with the isosceles sacrogluteal grooves. This hiatus varies in size and shape in different individuals. More than three fourths of the hiatus are slightly smaller than the forefinger nail. We make a practice in our prenatal clinic to determine ahead of time the condition of the sacral hiatus by palpation. Thus the patients with easily palpated sacral hiatus are listed on the examination chart. Those in whom the hiatus cannot be felt are declared unsuited for caudal analgesia in routine cases. However, when special medical indications, such as tuberculosis or heart disease are present, these patients are x-rayed by the Bishop modification of the Moloy technique for a special sacral study. These x-rays are produced by a fifteen degree angulation of the roentgen tube to direct the ray through the infrapubic approach.

This is one of the most important supplementary techniques that have been added to caudal analgesia since its introduction.

In numerous medical publications we have already substantiated the pioneer work of Cleland, who was the first to accurately locate the afferent uterine neurology.

In more than 3,000 personally observed and managed obstetric patients we have not found a single case in which a complete block of the eleventh and twelfth thoracic nerves was not accompanied by a total relief of the abdominal cramps of labor. Likewise, we have not found a single case in which well-established contractions of the uterus did not continue if the level of analgesia

was not permitted to rise above the tenth thoracic segment. Thus we have confirmed the natural anatomic dissociation between the motor and sensory components of the uterine nerves. This fact makes possible the clinical application of caudal analgesia in such a manner that the pains of labor are relieved and the cramps of labor continue without interruption.

A third component of uterine neurology should also be considered, namely, the nerve supply to the cervix. The nerve fibers which run to this fibromuscular structure have been determined to be both sympathetic and parasympathetic with ramal communications to the second, third, and fourth sacral somatic nerves. The afferent divisions of these nerves transmit the sensation interpreted by the parturients as the intense, agonizing crescendo of pain across the lower back.

The afferent components produce a more or less constant contraction of the smooth muscle bundle guarding the cervical os. Thus an anesthetic block of these nerves produces a welcome relief of pain and a relaxation of musculature which, in the presence of forceful uterine contractions from above, develops into a rapid dilatation and expulsion of the baby through the birth canal.

The pudendal nerve block, advocated by De Lee and championed by Greenhill, is more surely accomplished at the same time by the single caudal needle than was ever accomplished in the hands of the masters who used the human perineum as a bilateral pin cushion, which required psychosomatic medicine or the equivalent of nitrous oxide as a supplement.

The sympathetic motor fibers which proceed from the upper thoracic regions down the aortic plexus, through the celiac ganglion with reinforcements from the renal and genital ganglia, continue along the hypogastric arteries into the pelvis and through the great cervical ganglion of Frankenhauser to the smooth muscles of the uterus which they cause to contract. The fibers transmitting stimuli interpreted as abdominal labor or menstrual cramps proceed through sympathetics as special visceral afferents. These fibers do not synapse in the sympathetic ganglia, but they proceed directly through the structures of the eleventh and twelfth thoracic rami communicantes to the dorsal spinal root ganglia, and from thence into the dorsolateral fasciculus in the zone of Lissauer and up the posterior columns through the midbrain to the thalamus. Historically, this pain pathway should be known as the nerves of Cleland. Other fibers transmit impulses which control cervical dilatation, and influence uterine inhibition. As indicated, they run through the second through the fifth sacral segments.

The nerves of particular concern in this technic are those of the pudendal and perineal plexi.

Some uteri during labor do not exhibit forceful contraction. In some, the labor seems to be delayed because of an emotional endocrine dysfunction. We therefore present the following information which has not been reported previously:

Continuous caudal analgesia, improperly applied, can retard or actually stop the progress of labor! We have observed these phenomena clinically. We have substantiated them with the tocograph. There are three types of response of the uterus to caudal analgesia.

In from 40 to 60 per cent of the patients there is no significant change in the force, frequency, or duration of the pattern of uterine motility under caudal analgesia. In these patients labor progresses more rapidly than we ordinarily would expect because of the relaxation of the cervix and perineum. Thus in these instances the first stage of labor is definitely shortened, as the presenting part promptly descends to the perineum. In the majority of primiparas there is not sufficient somatic muscular power to deliver these babies spontaneously and simple outlet forceps will expedite the labor safely for both mother and baby. The third stage of labor can often be terminated, as indicated by Vaux and Mitchell, within one and one-half to two minutes, by simple expression of the placenta with simultaneous manual retraction of the corpus uteri over the promontorium of the sacrum and out of the pelvis. In these instances more than one half of the patients will lose less than 50 cc. of retroplacental blood. As a rule, these are the patients who definitely go into labor with uterine contractions that are three minutes apart and less, and with three to five cm. of cervical dilatation before continuous caudal analgesia is begun. The great majority of these patients have their babies within two to five hours after the institution of caudal analgesia. In this group the babies are more vigorous, exhibit less birth shock, and are born with their eyes wide open. They breathe and cry vigorously from five to thirty seconds after their heads are born.

The second type of uterine response occurs in from 20 to 35 per cent of patients. In these there is a constant diminution in uterine tone with increased amplitude of contractions. In some of them there are prolonged intervals between contractions. These labors, like the first group, progress rapidly and are terminated successfully. In both groups described above, the level of analgesia has not been permitted to proceed above the ninth thoracic segment.

In the third group of patients the uterine tone may be increased and there is a diminution of the

amplitude of the contractions. These responses are frequently associated with a high level of ascent of the analgesia to the point of the fifth to first thoracic segments. In these patients the labor pains are ineffectual. The progress of labor is retarded. In these also we have determined by auscultation of the fetal heart a bradycardia which is our most reliable indicator of fetal anoxia.

In four patients who were brought into the hospital because of violent trauma from such accidents as automobile wrecks or falls from a moving trolley, we first carried the level of analgesia to a high thoracic segment, unintentionally, to find that the almost tetanic contractions of the uterus ceased. In two of these patients in whom we had, at the moment, non-viable babies because of prematurity, we completely arrested labor to the point of delay of several weeks. In both of these patients we subsequently delivered babies which lived. Recently, therefore, in three other patients with premature babies we have attempted to stop labor. Once we were successful. Twice labor proceeded with unusual rapidity even though the level of analgesia extended to the clavicles.

We would like to emphasize to the profession that the correlation of further studies with the Murphy technic of the Lorand tocograph upon the uterine motility patterns of patients undergoing caudal analgesia will reveal concrete, fundamental physiology about which we now understand so little. The work of Frankel, who initiated this study, has been the most valuable single contribution of the year in this subject.

We have surveyed the current literature and have found that the three drugs most commonly used in this technic are metycaine, procaine, and pontocaine. All of them, in the hands of their advocates, have produced satisfactory results. We insist that physiologic saline or the three chlorides of Ringer's solution be the vehicles of dispersion of this drug in preference to distilled water. One and one-half per cent metycaine and 1.5 per cent procaine produce clinical results of such similarity that it is hard for the inexperienced to choose between them. We have substantiating evidence that metycaine, though clinically no more toxic than procaine, is definitely more potent. We prefer its use for the following reasons:

1. The intensity of the nerve block of the pain fibers is uniform and with Ringer's solution is definitely prolonged an extra ten to twenty-five minutes.
2. There have been a minimum of complications due to pharmacologic reactions to this drug.

3. The recovery of the nerve fibers with the return of normal body metabolism and function is more prompt and is followed by fewer sequelae.

4. Metycaine, a substitution product for cocaine, is synthetically derived from coal tar. It is, therefore, more stable in the presence of heat, pressure, and prolonged exposure to light than any of the known local analgesics. For that reason it can be reautoclaved and used with uniform efficiency many months after its procurement. We have not yet determined the upper limits of the body's metabolism and excretion of this drug. We have administered 11,000 mg. to each of nine patients over many hours without undue effects. We have injected 26 pounds of metycaine into the peridural space, when it exerts its pharmacologic control of pain for a minimum of forty and a maximum of one hundred and sixty minutes with a single dose. It can be repeated as an injection for as long as necessary. Our longest analgesia in obstetrics extended over a thirty-three hour period, during which time the travail of the mother's uterus was transposed onto the shoulder of the physician.

Metycaine is absorbed by the blood stream, and is metabolized partially by the reticulo-endothelial system of the maternal structures. A part of it is excreted through the kidney in demonstrable quantities in the maternal urine. Minute quantities of it pass through the placenta into the fetal circulation to produce what we have interpreted as a stimulation to the fetal nervous system. On two occasions after prolonged analgesia we have found evidences of metycaine in the first postdelivery fetal urine. Thus far in twenty chemical analyses of the amniotic fluid we have not found any metycaine therein.

Pontocaine in 0.10 to 0.25 per cent solution produces some analgesia which in a few patients is ideal, since it persists for two to five hours from a single dose. However, the intensity of the block of the pain fibers is never so great as with procaine and metycaine. Clinically, we have observed increased nausea from the use of this drug. The fact that it requires from ten to forty minutes following injection to produce total pain relief precludes its use from terminal delivery.

The complications associated with this technic were recently reported by us to the profession in our analysis of the first 10,000 so managed. During the past three years 36,000 babies have been born to mothers laboring without pain under continuous caudal analgesia. It has been alleged that this technic would never become a part of our obstetric armamentarium. It has also been declared that the fad of continuous caudal analgesia would soon be forgotten. Our

reports indicating that already more than 200 babies have been born with this technic in Persia, 50 in the Dominican Republic, 7,000 in Philadelphia, 3,000 in Brooklyn, 2,000 in San Francisco, 2,000 in San Antonio, 1,000 on Staten Island, 1,000 in Chicago, 1,000 in western Maryland, 850 in Syracuse, 400 in London, and 200 in Manhattan, seem to present ample evidence that continuous caudal analgesia is here to stay. The original 33 patients managed by this method were done at the Marine Hospital, Staten Island. Because of enlarged facilities in Philadelphia, most of the work, although continued at Staten Island by Edwards, has been carried out at the Philadelphia Lying-In Woman's Department of the Pennsylvania Hospital, and the Jefferson Medical College. It now becomes necessary for us to consider ways and means of educating the physicians to perform this technic while at the same time safeguarding the patient from the untrained physician who attempts to apply the method without fundamental knowledge of the basic medical science.

To meet this demand we have established, through the combined efforts of the United States Public Health Service under Surgeon General Parran, and the staff of the Philadelphia Lying-In unit of the Pennsylvania Hospital, a postgraduate medical course dedicated to the task of training the obstetrician and the anesthetist in conjunction with a specialized nursing supplement.

Already, with our limited facilities, we have trained 450 physicians from thirty-nine of the United States, six from the Provinces of Canada, fifteen from the Latin American countries, and five from the Continent of Europe. We have been aided in our task by the faculty and teaching facilities of the Jefferson Medical College. Our researches have not been limited to obstetrics, but include the use of this method in surgical cases, peripheral vasospastic disease, thrombophlebitis, peripheral arterial embolism, sciatica, pruritis ani, and traumatism of the lower extremities. The use of this method offers a promise of therapy to patients suffering from the ischemic stage of "immersion foot" described in the torpedo victims of the war at sea.

Continuous caudal analgesia may also be used as a diagnostic and prognostic procedure to determine indications for amputation of one leg in occlusive vascular disease. If clinical improvements can be produced for a few hours or a few days under continuous caudal analgesia, we have a valuable indication for the performance of lumbar sympathectomy.

Early in our experience we observed the dramatic reductions in both systolic and diastolic blood pressures in patients suffering from

TABLE 1

Total number vaginal deliveries.....	1,948
Total number under caudal.....	963 (49.4 per cent)

hypertension. Some of these blood pressure falls have been greater than 150 mm. of mercury. With these falls in blood pressure there has been a clinical improvement in the patients during the course of treatment with an alleviation of the accompanying headache and blurred vision. To our surprise, a few of these patients have maintained a markedly reduced blood pressure for as long as two days to three weeks following six hours of therapy with continuous caudal analgesia. We are therefore able to use this method as a pilot indicator of the effect to be attained by sympathectomy.

Our work with this technic in more than forty patients with eclampsia and associated convulsions has been likewise encouraging. As soon as the parturient with this disease has had her blood pressure reduced from 50 to 100 mm. of mercury, her convulsions stop and she usually requests, and receives, water and liquid nourishment. On the basis of physiology we have noticed the following clinical phenomena:

1. A maximum vasodilatation of the lower extremities enormously increasing the capacity of the vascular bed far superseding the effect of *Veratrum viride*.

2. A lowered blood pressure which can be maintained constantly for hours.

3. A block of the vasoconstricting elements to the kidney, thereby increasing the flow of urine in these potentially anuric patients.

4. A temporary denervation of the suprarenal gland with a corresponding diminution in the manufacture of the endocrine vasospastic substance.

Our experience with the management of these patients without loss of mother life indicates to the profession that experts in metabolism, pharmacology, and obstetrics should unite with us in a study of this condition.

At no time, contradicting the many lay articles which have been written concerning continuous caudal analgesia, have we felt or even been inclined to believe that this method is a panacea for the pains of childbirth and we would like to point out at this time that we have at our disposal at least four other safe and effective means of inducing analgesia and amnesia. According to a recent article by Kotz, of Washington, and we quote from his article, "Each has certain peculiar advantages and disadvantages, but in capable hands all of them are of value. As in anesthesia, so in obstetrical analgesia, the agent used should

be the one best adapted to the particular case. Best results cannot be obtained by rigid routines. The obstetrician and the obstetrical anesthetist should be conversant with all methods, and constant attendance upon the laboring woman is necessary if proper supervision of the analgesia is to be carried out." Kotz is also of the opinion that a combination of the obstetrician and the anesthetist is ideal and is firmly of the opinion that every woman may be given complete analgesia and amnesia with safety for herself and her offspring, if sufficient attention to detail and sufficient personal supervision are available.

We are presenting our analysis of 963 patients delivered at the Philadelphia Lying-In Hospital from June 1, 1943, to May 1, 1944. The reason we have selected this series is that it includes all patients given caudal analgesia since the inception of our postgraduate school and more particularly because the analgesia has been administered by more than 300 different individuals. This includes the men taking our postgraduate course as well as our trained permanent staff. We have not included in the following report any patient delivered by cesarean section. Up to May 1 we performed 154 cesarean sections under continuous caudal analgesia without any maternal death and only one fetal death, which occurred at five and a half months' gestation, in a patient with severe toxemia. During the past three years we have used practically no inhalation anesthesia for our cesarean sections, and at the present time we are trying to evaluate the difference, if any, between the use of fractional spinal and continuous caudal.

At the present moment we are of the opinion that either one of these methods is eminently satisfactory and do not believe that there is a great deal of difference in the results obtained. A detailed report of the use of continuous caudal analgesia in cesarean section is being made in a separate communication.

Table 1 shows the number of vaginal deliveries at the Philadelphia Lying-In Hospital from June 1, 1943, to May 1, 1944. Cesarean sections and abortions are not included in this group. Of the 1,948 patients delivered vaginally, 963, or 49.4 per cent, were either delivered under continuous caudal analgesia or attempts were made to carry out the technic. We have included in this number all those patients who were considered suitable for this technic. In a previous communication we reported 52.9 per cent of patients who were considered suitable. The rapidly progressing multipara, the obese, the abnormalities of the sacrum, and other contraindications will rule out about 50 per cent of the routine patients admitted to the hospital. We have found, however, that

TABLE 2

Age Group	Patients	Percentage
10-20	95	9.9
21-30	608	63.1
31-40	253	26.3
41+	7	0.7
	963	100.0

the incidence of suitable cases occurring in private patients is about 60 per cent.

Table 2 shows the age group in these 963 patients. We thought we were going to be able to obtain some information from breaking this series into age grouping but upon closer analysis there is not much difference between the length of labor or the blood loss in any of these groups listed.

TABLE 3

Parity	Patients	Per Cent
0	458	47.6
1	310	32.2
2	97	10.0
3	70	3.1
4	7	0.7
Other	61	6.4
	963	100.0

Table 3 shows the parity. As is seen, the largest number were in the nulliparous class. So many of our clinic multiparae arrived in the delivery room far advanced with their labor that it automatically reduced the number a great deal in whom we were able to follow out this procedure.

TABLE 4

Presentation	Patients	Percentage
Anterior	820	85.4
Transverse	67	6.8
Posterior	34	3.5
Breech	42	4.3
	963	100.0

Table 4 shows the position of the presenting part. One of the frequent criticisms of continuous caudal analgesia is that it is the causative factor in posterior rotations of the occiput. Before we analyzed our last statistics we were of the same opinion, but find on careful scrutiny of our records that the incidence of posterior position was approximately the same as in those who had other forms of analgesia. Neither the transverse arrest nor the posterior position has given us any particular difficulty, as under caudal block it is much easier to rotate these heads into an anterior position, either manually or with the Luskart forceps. We have found that in the transverse position, by inserting one blade of the forceps and having the patient bear down with

TABLE 5

Method of Delivery	Patients	Percentage
Low forceps	577	59.9
Midforceps	71	7.4
Spontaneous	153	15.8
Breech extraction	42	4.4
Unrecorded (failure)	120	12.5

the uterine contraction, often suffices, with one or two contractions, to rotate the head to an anterior position.

Table 5 shows the method of delivery. The incidence of low forceps, 59.9 per cent, is approximately what we have averaged over a period of twelve years under all forms of analgesia. It has been our common practice to deliver practically all of our patients by outlet forceps. Therefore, the criticism that it increases the number of forceps deliveries, as far as our own clinic is concerned, does not hold true. We listed the forty-two breech patients as being breech extractions. However, we have found that under continuous caudal analgesia the extraction becomes quite simplified and in practically all cases is almost spontaneous. We have routinely, for years, used the aftercoming-head forceps on our breech extractions. Very frequently the delivery of the head in this group was so rapid by the expulsive forces of the uterus and having the patient bear down with the contraction, that we did not have time to put on the aftercoming head forceps. The 120 patients listed as "unrecorded" were those thought suitable for this technic, but who failed to obtain proper analgesia, as will be discussed later.

TABLE 6

Blood Pressure
Fall of 20 mm. systolic or more
284 patients (29.4 per cent)

Table 6 shows the number of patients who had a fall of blood pressure of 20 mm. systolic or more. The pharmacologic effect of caudal, spinal, and peridural analgesia without the addition of prophylactic vasopressor substances has been the production of hypotension. The dynamics of this hypotension are entirely mechanical. There is an extreme dilatation of the vascular bed of the lower extremities. Such a dilatation, because of the block of the vasomotor sympathetic nerve fibers, conceivably produces a diminution of the arterial pressure. The reason that the percentage in this group is as high as it is, is that about 50 per cent of them were handled without the use of ephedrine as a prophylactic measure. This was because we were interested to see how quickly the blood pressure would return to normal by merely raising the feet and

TABLE 7

Average length of labor	10 hrs. 23 min.
Average length of analgesia	3 hrs. 23 min.
Average blood loss	93 cc.

legs to right angles with the body axis, which produces an autotransfusion. The legs are held in this position for thirty seconds to one minute. Ninety per cent of these patients can be restored to their normal pressure by merely carrying out this procedure. The other 10 per cent have to be treated by the use of ephedrine in 25 to 50 mg. doses. Recently, in spite of the fact that the large percentage of these patients can be restored to normal by raising the feet, we have been employing the ephedrine more or less routinely, so that in our next series of patients reported, we feel sure that the drop in blood pressure will not be so pronounced. It should be pointed out that during extremely hot weather, when the parturients have lost considerable body fluid through diaphoresis and sometimes nausea and vomiting, there is no substitute for intravenous saline and glucose and, in the debilitated, blood plasma. It should be further emphasized that patients under caudal analgesia do not sweat below the level of the block. For that reason, during extremely torrid summer weather they should have their skin frequently moistened with wet towels or should be permitted to labor in air-conditioned rooms.

Table 7 shows the average length of labor to be ten hours and twenty-three minutes. We are thoroughly convinced that patients delivered under continuous caudal analgesia have a shorter labor than if managed in some other manner. The average length of analgesia seems to be quite short—three hours and twenty-three minutes. This, we find on careful analysis, is due to the fact that particularly in multiparas who are in well-established labor when the mety-caine is injected, the cervix will dilate very rapidly. We have observed on many occasions a cervix going from 3 to 4 cm. dilatation, provided it is completely effaced, to practically complete dilatation in just three or four uterine contractions. We are of the belief that if the ordinary discomfort of the effacement period of the first stage of labor is not too great and can be relieved by a small dose of seconal, usually 3 grains, and the caudal analgesia is started when dilatation averages about 3 or 4 cm., the cervix will dilate under its influence with great rapidity. In other words, just as in the management of any parturient, the analgesic selected should not be given too early. From our own experience we believe that the best results are obtained when the caudal analgesia is used for not more than

TABLE 8.—FAILURE OF ANALGESIA TO TAKE EFFECT—120 PATIENTS, OR 12.5 PER CENT

Anesthesia	
1. Insertion of needle	17
a. Deformity or anomaly	11
b. Obesity	7
c. Intravenous	6
d. Subarachnoid	5
e. Anterior or posterior sacral	3
2. Unable to secure proper level	32
3. Nausea, vomiting	8
4. Uncooperative; dislodged or removed needle	8
Obstetric	
1. Failure to progress	11
2. Anesthesia started too near delivery	8
Miscellaneous	
	4

eight hours. The average blood loss in this series, as shown in this table, is 93 cc. We have had two patients in this series who had a blood loss of 500 cc. This occurred about twenty minutes after the termination of the third stage of labor. It has been our routine not to give any oxytocic drugs until after the placenta is delivered, as the uterus remains quite firm following the delivery of the child. The minimal blood loss has been one of the outstanding benefits derived from the use of this technic. In the most striking patient we have ever seen, a mother was delivered of large vigorous twins with a measured blood loss of 20 cc.

Table 8 shows that we have included in this series 120 patients who were thought suitable for this form of analgesia, but in whom it was unsatisfactory. As previously stated, we selected this group of patients to report because of the fact that over 300 doctors who were being trained in this technic handled the majority of these patients. We have routinely insisted that no more than three attempts to enter the sacral hiatus should be made and, as very frequently happened, the untrained individual bypassed the opening and the method was discontinued. There also was quite a large group in which abnormalities of the sacrum made it impossible to carry out the technic satisfactorily. An analysis of those patients given caudal analgesia by members of the staff who were trained in the technic decreases the incidence of failure to about 5 per cent, and in the past few months patients who were handled by these trained individuals show the incidence of failure to be further reduced. X-ray according to the Bishop technic has further reduced the incidence of failure by discovering unsuitable sacra before the onset of labor, thus ruling out these patients who were previously thought suitable.

Table 9 shows we have listed three maternal deaths occurring in these 963 patients. None of the deaths were attributable to the use of continuous caudal analgesia, but in view of the fact

TABLE 9

Mortality	
Maternal	
Fetal	None attributable to caudal analgesia

that these patients were handled by this method, it is only fair to list them under maternal mortality. All of these deaths occurred many hours or even days following the delivery. There were no fetal deaths attributable to the use of this technic, and, as has been pointed out in previous communications, the condition of these babies is particularly good at the time of birth. So much is this true that in delivering vaginally it is a good policy to rapidly sweep the chin over the perineum, as the only babies we have had any difficulty with were those that were seen to breathe when the head was partially delivered, and who insufflated a great deal of vaginal secretion. There were only a few of these, and they were immediately restored to normal by aspiration of the upper respiratory passages.

### Summary

In this communication we again call your attention to the care which is necessary in carrying out the technic of continuous caudal analgesia, together with a statistical report on 963 patients delivered at the Philadelphia Lyng-In Hospital and administered by 305 doctors who were being trained in this technic. This accounts for the higher number of failures than we find occurs when caudal analgesia is given by the trained anesthetist. These statistics, we believe, substantiate our belief that continuous caudal analgesia will become a permanent factor in the practice of obstetrics, particularly in the handling of premature babies, cardiac disease, respiratory infections, and the toxemias of pregnancy. Included in this paper is a summary of the recent supplementary work done in anatomy in several medical schools, with particular emphasis on the sacral hiatus, the sacrum, and the peridural space. The anomalies relating thereto have been emphasized. The present knowledge of the uterine by the Bishop-Moloy technic have been introduced. Tocographic determinations of uterine response under continuous caudal analgesia have been analyzed against the pharmacologic background associated with this technic. The incidence of complications and the contraindications indicate that this is still a technic to be performed by a specialist in the hospital.

### Conclusions

Almost every drug that has been found to possess pain-relieving properties in any branch of

the medical sciences has been used at one time or another in obstetrics. Many of the investigators with these drugs and technics have contributed just as much to the safety of the mother and baby in discouraging the use of certain technics as have the proponents of many of these measures with their efforts to relieve the suffering and distress of parturition. The fact that any patient undergoing obstetric management with amnesia, analgesia, or anesthesia should be surrounded by all the safeguards of a modern hospital with a trained personnel cannot be overlooked. Since more than two-thirds of American babies are still delivered in the home, it would be a premature conclusion that the pains of labor and delivery can be completely controlled by the existing armamentarium of medical sciences. The day of the panacea is not yet in sight. However, tremendous strides have been made toward this end in the last four decades. The Old Testament curse of womankind may some day be repudiated in the fulfillment of the New Testament prophecy from *I Timothy 2:15*: "She shall be saved in childbearing if they continue in faith and charity and holiness with sobriety."

"*Divinum est opus sedare dolorem*" (Divine is the work to subdue pain)—so spoke Hippocrates. This still is the challenge to the chemist, the pharmacologist, the obstetrician, and the anesthetist, who are uniting their efforts toward the safe control of pain in childbirth.

807 Spruce Street  
Philadelphia

### Discussion

Dr Benjamin P. Watson, New York City—It is a moot question whether the publicity which things medical get in the lay press today or the hush hush methods of former times do the more good or the more harm. Lay journalism puts its emphasis on sensation, scientific writing on accuracy.

Having recently had some experience with the ferocity of the reporter, hunting in pack in pursuit of its prey, I am in a position to appreciate what Dr Hingson and Dr Edwards had to contend with when they first developed their method. Fortunately, he, the journalist, is quickly satiated and drops the subject as soon as its sensational and emotional appeal is past. Not so with the scientist, he goes on working out details, checking former observations, making new ones, and correlating these so as to present a truer and more accurate picture.

That is what Dr Lull, Dr Hingson, and their coworkers have been doing for us in the past year. As a result, we have had presented to us today a cold analysis of the facts relating to and an evaluation of the results of caudal analgesia in labor.

That this new method of relieving the pains of labor should have been received with such open mind and developed with such enthusiasm in Philadelphia seems almost like an act of expiation for the sins of those pundits of the past, who there so



bitterly opposed obstetric anesthesia when it was introduced nearly one hundred years ago.

No one who has followed the work of our authors, either by direct observation of their patients or by reading or listening to their articles, can have any doubt as to the relief of pain afforded by caudal anesthesia. They further claim that it does not retard but, in most instances, expedites labor, especially in its first stage; that it causes such relaxation of the structures of the pelvic floor that the second stage can be terminated by an easy low forceps traction; that the third stage is shortened; that blood loss is lessened, and that the child is not apneic but cries lustily immediately after it is born. All of these claims I believe they have fully substantiated and they have every right to be enthusiastic.

But their enthusiasm is tempered with caution, and their chief emphasis today is on caution and contraindication.

The cases for it must be carefully chosen; in their experience not more than 60 per cent of private patients and not more than 50 per cent of general clinic patients are suitable. It is, therefore, not something that can be "sold" to every pregnant woman who presents herself in the doctor's office. As in the past, no one can promise a woman a painless labor.

They lay great stress on the necessity for teamwork between the obstetrician and the anesthesia staff. It is not a method to be used casually by the individual. It is necessary to have those skilled in the technic of needle introduction; there must be constant supervision of the apparatus and rate of flow. When things go wrong there must be no delay in applying appropriate remedial measures. The Philadelphia Lying-In Hospital has been fortunate in being able to provide all of these things. Some other clinics, among them the one to which I am attached, have not had the necessary personnel, so our experience has been very limited. When the present emergency is over I believe that every major obstetric department will have a staff trained to carry out the method in the cases suitable for it.

What might be called the side issues of this investigation are of great interest and of real scientific and practical value. The anatomy of the sacrum has been studied on the cadaver and by x-ray, and new facts have been brought to light.

The anatomy of the nerves of the uterus and other pelvic organs has been elucidated. I hope that as a result of the work of our authors I shall be able to teach it to my students in a more satisfactory way than I have done in the past.

The authors' observations on blood pressure and on the effects of caudal analgesia in the eclamptic state hold out great hope for the future.

I congratulate the authors on their scientific approach to this very practical problem in obstetrics.

**Dr. William Levine, Brooklyn, New York**—The authors' efforts to stimulate further research and investigation in uterine neurology and physiology and anatomic variations and malformations of sacra are very laudable. Moreover, their undertaking to teach and train several hundred physicians

to properly and safely administer continuous caudal analgesia is commendable. The results of their tocographic observations are eagerly awaited. Their reported x-ray studies of the anatomic variations of sacral hiatus have already been of great benefit.

As obstetricians we feel indebted to them for their persistence in making this form of analgesia a permanent part of our armamentarium. Efforts to discredit the method because of undue and premature acclaim of "painless birth" by the public press are unfair. This should not deter us from giving the procedure a fair trial in our delivery rooms.

We have used continuous caudal analgesia at the Beth-El Hospital since February, 1943, in 836 patients. We administer 1.5 per cent metycaïne in normal saline and incorporate ephedrine in the solution. Thirteen of these patients had cesarean operations; the remainder were delivered by the vaginal route either spontaneously or by low forceps, midforceps, forceps rotation, manual rotation, breech extraction, or internal podalic version. Most obstetric procedures have been done under this form of analgesia satisfactorily, without supplemental inhalation anesthesia.

The duration of the entire labor is remarkably shortened. Cervical dilatation is very rapid, definitely shortening the first stage. Instances of persistent thick cervical lip remaining for many hours in occipitoposterior position are infrequent. On the average, full dilatation was reached in three and a half hours for primiparas; in multiparas in less than two hours. Descent during the second stage of labor is unhampered and progresses rapidly, but actual delivery in many instances must be accomplished by forceps. We agree with the authors that instances of persistent occipitoposterior position and deep transverse arrest have not materially increased. Operative delivery is facilitated because of the relaxation of the pelvic parts. Repair of pelvic floor lacerations and episiotomy is greatly facilitated.

The third stage of labor has similarly been rapid and with minimal blood loss. Postpartum hemorrhage due to uterine atony was encountered only one time. There were no instances of retained placenta. The routine use of oxytocic drugs may be eliminated, for at the end of labor the uterus remains firm, well contracted, and at or below the umbilicus. Subsequent involution of the uterus and other pelvic structures is satisfactory throughout the puerperal state.

We have had no maternal mortalities or maternal morbidities from this form of analgesia. All newborn infants cried spontaneously immediately after delivery and only few needed any resuscitation. Extensive resuscitation was needed only when traumatic obstetric deliveries caused delay in initiating respiration.

The uterus continues to contract rhythmically throughout labor; therefore, any intrauterine manipulation is inadvisable. Hence, when this procedure is anticipated, as in transverse lie, unengaged frank breech, possible version in a

second twin, placenta previa, abruptio placenta, unengaged head, it should not be administered. It is, however, of decided benefit in patients suffering from heart disease, pulmonary disease, and toxemia of pregnancy.

Short of the above conditions, this form of analgesia is suitable in the great majority of obstetric cases.

In cases in which there is an existing localized infection, sinus, or evidence of an occult lesion or anatomic malformation in the sacrococcygeal region, it is obviously inadvisable to use this form of analgesia. Our experience at the Beth-El Hospital

has been that the above exceptions do not account for 40 per cent of unsuited cases, as stated by Drs. Lull and Hingson.

We urge its adoption to further crystallize its usefulness. We agree that for successful use it needs a setup where facilities are provided for close watching, expert obstetric judgment in its application, and skill in its administration. At present, it is not a method that can be used by individual practitioners in inadequately equipped hospitals nor in home deliveries. To us it seems to be an obstetric analgesic that more closely approaches the ideal than any heretofore in vogue.

### INFANTILE PARALYSIS FIGURES

In the first thirty-one weeks of 1944, the United States had more cases of infantile paralysis reported than at any comparable time shown on the records in twenty-eight years, the National Foundation for Infantile Paralysis has disclosed.

Latest figures from the U. S. Public Health Service, showing state reports through August 5, reveal a total of 3,992 cases. This is 1,226 cases more than reported for the same period last year when the nation suffered its third-worst polio epidemic, and 1,089 cases more than in 1931, when the second-worst outbreak was recorded. The records of the worst outbreak, in 1916, show there were 6,767 cases by August 1 of that year.

In five states where the outbreaks were in epidemic or near-epidemic proportions, the total cases reported through August 5, 1944, are higher than those states reported for the entire year of 1943.

They are:

State	Through August 5, 1944	Entire year of 1943
New York	902	692
North Carolina	470	37
Kentucky	377	157
Pennsylvania	284	143
Virginia	205	61

The serious or threatening outbreaks this year were confined almost entirely to states east of the Mississippi, while last year's were largely west of the river.

Basil O'Connor, president, reported that the National Foundation has sent epidemic aid, in either emergency funds, professional personnel, or supplies and equipment, into thirteen affected states.

In addition to the five states named above, they are: Ohio, Tennessee, Michigan, Mississippi, Indiana, Washington, Oregon, and California. Outbreaks in the latter three states earlier this year

### CRIPPLED CHILDREN GET \$10,000,000

The Association for the Aid of Crippled Children of 580 Fifth Avenue, New York City, will come into a bequest, exceeding \$10,000,000, within the next few months.

Milo M. Belding, a silk-thread manufacturer who died on October 13, 1931, provided in his will that his residuary estate should go to the Association on the death of his wife, who received the income for life. Mrs. Belding died on September 4.

The estate was appraised in 1934 at \$3,819,366 gross and \$3,303,311 net. After a number of bequests to employees, the residuary estate amounted to \$3,107,731.

Mr. Belding had previously, in 1921, erected a trust fund, providing that the income was to go to his widow for her lifetime and that on her death

\$10,331,183, but Thomas S. McLane, treasurer of the Association, said that he understood their present value was somewhat less than that figure.

Mr. McLane said that the Association had not yet decided upon its plans for utilizing the very large sum that will come to it. He said that it would probably be a number of months before the money would become available, and that meanwhile the Association would carry on its normal course.

The association, which has district offices at 1826 Arthur Avenue, the Bronx, and 12-26 Thirty-first Avenue, Astoria, Queens, provides home visiting and health supervision of mentally normal, orthopaedically handicapped children from birth to 16 years, by a specialized staff of graduate nurses.

The enormous expansion that will be made possible by the Milo M. Belding Fund may be judged from the fact that the Association's total expenditures in 1943 were \$93,778. Its receipts last year were \$81,709, leaving a deficit of \$12,069.

January in the celebration of the President's birthday.

# DIAGNOSIS OF DISORDERS OF THE SMALL AND LARGE INTESTINE

EVERETT D. KIEFER, M.D., Boston

THE diagnosis of disorders of the small and large intestine depends largely upon the recognition of significant *subjective symptoms*.

A common complaint, such as constipation, may mean much or very little. If by "constipation" the patient means infrequent stools over a period of many years without serious impairment of health, the complaint is probably either imaginary or functional. If, on the other hand, there has been a recent and distinct change in bowel habits, an organic basis for the complaint must be considered as a probability. It is the change in function which is significant. For example, the unexplained onset of loose stools after lifelong constipation may be hailed by the patient as an improvement but may signify the development of a new growth in the colon.

As a general rule, diarrhea is more likely to signify a real disorder than is the complaint of constipation.

Other signs and symptoms which tend to indicate an organic disease rather than a functional disorder are anorexia, loss of weight, fever, anemia, leukocytosis, pain which is intermittent and severe or interferes with sleep, and blood or pus in the stools. When any of these clinical features exists, a search should be carried on until the explanation is discovered.

The significance of any subjective complaint is better understood if the disturbed physiology that produces it can be identified. Briefly, the functions of the intestine include liquefaction of food material, digestion, absorption, and motility.

While the digestive and absorptive processes are going on, the intestinal contents progress constantly toward the rectum. Consequently, disturbances in motility may affect the other functions of the intestine, and, as a producer of symptoms, disturbed motility outweighs in importance all the other disorders of function.

Intestinal pain is a product of disturbed motility and occurs as a result of abnormal spasm or tension in the intestinal wall. It may be associated with the hypermotility that follows intestinal irritation or with the forceful efforts on the part of the muscularis to overcome mechanical obstruction. Intestinal pain, which may be identified by its intermittent, sharp, cramp-like nature, is referred to by patients as "gas pains." It tends to appear immediately after the intake

of food because it occurs simultaneously with intestinal peristalsis. Pain which occurs just before defecation and is relieved by the passage of gas or a stool usually arises in the colon. Intestinal colic, which causes poorly localized and shifting pain, tends to involve both sides of the abdomen. Since renal colic tends to be localized to only one side, this is a useful differential point. There is usually no radiation to the groin, genitals, or thigh, as may occur in urinary tract pain.

Right upper quadrant pain is common in colon disorders, but radiation into the right subscapular region, so characteristic of biliary colic, is rare. The extension of upper abdominal pain up into the chest, which is often noted with gastric, pyloric, and duodenal spasm, is not common in intestinal colic.

Chronic, persistent right lower quadrant pain, particularly when it is long-standing, is much more likely to be indicative of an irritable cecum than of chronic inflammation of the appendix. Left lower quadrant pain also may indicate a spastic condition of the colon, particularly if it is associated with a palpable, tender, and ropy sigmoid.

The differentiation between small-intestinal and colonic pain is difficult and often uncertain. Pain arising from small-intestinal colic has a tendency to be most intense in the upper abdomen or around the umbilicus. Pain arising in the large bowel usually is felt across the lower abdomen, but may be fairly well limited to any of the four abdominal quadrants or even to the low back.

Nausea, which is a fairly common symptom, occurs simultaneously with the intestinal colic. If the pain is severe, there may be vomiting. Nausea and vomiting are apparently due to reflex action upon the stomach, since they frequently occur in the absence of mechanical obstruction. Of course, when obstruction exists, particularly at a high level, vomiting is much more prominent.

The character of the stool also is controlled largely by the motility rate in the intestinal canal. The content of the small intestine enters the cecum in a liquid state, but as it passes over to the sigmoid there is constant absorption of water with the result that the liquid is changed to a soft solid mass. A liquid or abnormally soft stool indicates hypermotility of the colon, with insufficient time for water absorption; on the other hand, a hard dry stool indicates too slow passage of the stool through the large bowel. Therefore, when a patient complains of either constipation or diar-

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From the Department of Gastro-Enterology, Lahey Clinic, Boston.

rhea, one should determine the consistency of the stool before forming an opinion of the actual motility of the colon.

Colonic motility is dependent partly upon the function of the small intestine. The large bowel action may be slowed by diminished flow from the ileum as a result of reduced food intake or other causes, or it may be accelerated by hypermotility of the small bowel. The clinical importance of this is that diarrhea may be a symptom of small-intestinal disease.

Intestinal motility, particularly in the small intestine where practically all digestion and absorption take place, also may affect other functions of the digestive tract. In acute or chronic inflammation or irritation, a small-intestinal diarrhea occurs which does not permit adequate absorption. In consequence, the stools contain abnormal amounts of unabsorbed protein, carbohydrate, fats, and vitamins, and malnutrition naturally follows.

Other information concerning the gross characteristics of the stool is usually available through the history. The presence of mucus, which may be a matter of great concern to the patient, really means very little except increased irritability of the colon or a neurogenic overactivity of the mucus producing glands.

Gross blood, on the other hand, is always significant. It should never be ignored and its source should always be determined.

The physical findings in intestinal disorders often are provocative to further study without being actually diagnostic. This is true of all signs of malnutrition, blood loss, abdominal tumors, distended intestinal loops, and visible peristalsis. Errors in physical diagnosis are much too frequent and are chiefly errors of omission. Since a high percentage of rectal cancers are within easy reach of the examining finger, many tragic delays would be avoided if the rectal examination were considered an indispensable routine.

Another office procedure by which the diagnosis often can be established is the proctoscopic examination of the rectum and lower sigmoid. The proctoscope is a simple instrument, safe and easy to use, and serious errors are uncommon even in inexperienced hands. This instrument, which should have a place in every general practitioner's equipment, provides a direct inspection of the interior of the rectum by which tumors, ulcerations, and inflammatory changes in the mucosa readily may be discovered. The most important service rendered by the proctoscope probably is the elimination of the diagnostic "blind spot" at the rectosigmoid juncture. Lesions at this point, which often are just beyond the reach of the examining finger, are notoriously difficult to demonstrate by roentgenologic examination.

The only safe procedure is to perform a proctoscopic examination on every patient with rectal bleeding. The source of bleeding usually can be determined, and even when no lesion is seen, blood coming from above the reach of the instrument is positive proof of an organic lesion.

Diarrhea is another indication for proctoscopic examination. Changes in the mucosa may be identified, and a specimen of stool or exudate may be obtained for immediate microscopic examination and culture.

The roentgenogram plays an important role in the diagnosis of intestinal disorders. With the exception of patients suspected of having low-bowel obstruction, a barium meal with films taken at suitable intervals to show the small intestine and cecum, followed in twenty-four hours by a barium enema, yields the most conclusive findings. The small bowel is best studied by films taken at hourly intervals for a period of six hours after a barium meal. The serial films reveal small intestinal motility, obstruction, dilatation, and changes in the caliber, flexibility, and mucosal pattern.

Certain limitations of roentgenologic diagnosis must be kept in mind. Since narrowing of the lumen of the small bowel may cause no delay until obstruction is almost complete, intermittent small-intestinal obstruction, particularly when caused by bands of adhesions, may not be evident roentgenologically unless the examination is made in the presence of symptoms of obstruction. In suspicious cases, if possible the patient should be examined during an attack even if only by a plain film of the abdomen, in the upright position, so as to show fluid levels in the distended loops.

### Case Reports

Some of the more important points in roentgenologic diagnosis are illustrated in the following cases.

**Case 1**—A woman, 26 years of age, complained of bloody diarrhea of ten months' duration. At times she had fifteen stools a day. She was extremely nervous and had lost 40 pounds in weight. The appetite was poor. There had been no remission or relief in spite of treatment for ulcerative colitis.

There was no abdominal mass. The digital examination of the rectum was normal. Proctoscopic examination revealed a cauliflower like lesion with a central crater characteristic of adenocarcinoma at the rectosigmoid juncture. A barium enema was attempted but the barium could not pass beyond the rectosigmoid.

The diagnosis of adenocarcinoma was confirmed by operation and tissue examination.

While the clinical picture of this case strongly



FIG. 1. Barium enema showing a long, obstructing filling defect in the sigmoid, produced by an inflammatory mass arising from diverticulitis.



FIG. 2. Barium enema showing a filling defect in the cecum caused by adenocarcinoma.

suggested ulcerative colitis, if the following four axioms had been observed, the error in diagnosis would have been avoided.

1. Cancer of the rectum or intestine may occur at any age.

2. The source of blood in the stool always must be determined.

3. The diagnosis of ulcerative colitis should not be made without direct visualization of the pathologic changes in the mucosa by proctoscope.

4. The roentgenogram is not entirely reliable in ruling out lesions in the rectum or rectosigmoid.

*Case 2.*—A woman, 75 years of age, complained of a mucopurulent rectal discharge of six months' duration. For twenty-five years at intervals of two or three months attacks of lower abdominal pain, diarrhea, and vomiting had occurred. During the last ten months a persistent diarrhea had developed. Her appetite had failed, and she had lost weight and strength.

Except for moderate emaciation, the physical examination was not revealing. There was no fever or mass in the abdomen. The rectum was normal by digital examination and by proctoscope, but it was impossible to pass the proctoscope beyond the rectosigmoid because of fixation of the bowel. The

blood examination showed a moderate anemia and a normal white cell count. The barium enema showed an obstructing organic stricture of the sigmoid (Fig. 1).

In the differential diagnosis of this type of case, cancer of the sigmoid should be considered first, and about the only other possibility is diverticulitis. The anorexia, anemia, and weight loss certainly suggested carcinoma, but the absence of blood in the stools and the mucopurulent discharge favored inflammatory disease. The roentgenologic picture could be produced by either condition, but certain features, such as the length of the deformity and the fusiform shape of the ends of the defect, instead of a hooking over of normal bowel wall, were in favor of an inflammatory mass.

The diagnosis of diverticulitis was confirmed at operation.

*Case 3.*—A woman, 43 years of age, complained of right abdominal pain occurring at irregular intervals for four years. She had had three attacks of severe abdominal pain. Her appetite was normal, but she had lost 9 pounds. After taking castor oil she had had a loose stool containing some red blood.

Examination revealed a definite pallor and a palpable mass in the right lower quadrant. The blood



FIG 3 Barium enema showing an annular filling defect in the sigmoid. Diagnosis: Carcinoma of the sigmoid.



FIG 4 Roentgenogram of the colon showing a large mucosal polyp in the descending colon.

examination showed a moderately severe anemia. The roentgenogram of the upper gastrointestinal tract was negative except for dilatation and delay in the lower ileum (Fig 2). Roentgenologic examination by barium enema showed a discrete filling defect innervating the cecum at the ileocecal valve.

The diagnosis of carcinoma of the cecum was confirmed by operation.

This case illustrates the occurrence of a serious lesion in a relatively young person with vague and rather chronic abdominal symptoms, and emphasizes the value of a complete study in any person of middle age who complains of a change in digestive functions. Lesions of the cecum are often "silent" except for the anemia which is so characteristic of cancer of the right colon. This is true because obstruction is a late development because of the large caliber of the lumen and the fluid content of the bowel which permits the growth to become relatively large before pain occurs. In the presence of severe anemia, cancer of the right colon should be considered even though abdominal symptoms are absent or minimal. In this case obstruction at the ileocecal valve produced small intestinal obstruction and colic.

**Case 4**—A man 67 years of age complained of lower abdominal pains. He had always had constipation and had taken laxatives all his life, but for three months he had had sharp cramp-like pain and

bloating of the lower abdomen and increasing difficulty in bowel function. His appetite was almost normal. He had lost 5 pounds.

The physical examination was not revealing, and the rectal examination was negative. The blood showed a slight anemia. Roentgenologic examination by barium enema showed an annular filling defect in the sigmoid (Fig 3). Diverticula were also present.

The diagnosis of carcinoma of the sigmoid was confirmed by operation.

This case illustrates the significance of a change in bowel habits and the importance of diagnostic study. The differential diagnosis was between carcinoma and diverticulitis. Even though diverticula were present, the roentgenologic defect was more characteristic of carcinoma than of an inflammatory lesion. The typical "hooking" deformity is caused by the sharp demarcation between normal and rigid bowel wall, such as occurs in annular new growths, while in granulomas of the bowel the transition between rigid and normally flexible intestinal wall is not sharply demarcated and the narrowing is gradual.

This patient's symptoms obviously were caused by progressive obstruction which occurred early in the development of the growth because of the solid nature of the intestinal content when it reaches the sigmoid.

**Case 5**—A girl, 4 years of age, had had generalized



Fig. 5. Roentgenogram of the colon with double contrast technic showing a polyp in the sigmoid.

abdominal pain associated with the passage of bloody stools for two months. The stools sometimes consisted almost entirely of red blood. There was no fever and the child's general health appeared to be normal.

The physical examination was negative. Blood examination showed no anemia. The proctoscopic examination was negative, except for blood coming from a level higher than could be reached with the proctoscope. Roentgenologic examination by barium enema showed a rounded filling defect in the descending colon (Fig. 4).

The diagnosis of a mucosal polyp was confirmed by operation.

The most common symptom of a single benign polyp of the colon and rectum is bleeding. With a tumor as large as this, intermittent attacks of intussusception with severe pain are likely to occur.

The visualization and identification of small intraluminal tumors of the colon may be aided by the use of the double contrast technic, or air enema, in which the colon is distended with air after just sufficient barium has been introduced to cover the mucosa.

Fig. 5, a roentgenogram of a double contrast enema in another case, demonstrates a barium-covered polyp projecting into the lumen of the sigmoid, which is distended with air.

*Case 6.*—A man, 37 years of age, complained of



Fig. 6. Roentgenogram of the colon in chronic ulcerative colitis shows loss of haustral markings and ragged irregular outline caused by ulcerations, and fibrotic changes in the bowel wall.

chronic diarrhea of five years' duration. For two years before the onset of diarrhea he had noted frequent rectal bleeding. The attacks of diarrhea, which had increased in frequency and duration, were brought on by respiratory infections, overwork, and emotional upsets, and at times were accompanied by some fever. He frequently noted blood in the stools, which were watery and often consisted of only a small quantity of blood-tinged mucopurulent exudate. Six to eight stools usually occurred during the day and two or three at night. There had been a gradual loss of 50 pounds in weight.

On examination the patient was pale and emaciated. There was no abdominal tumor. The blood showed a marked hypochromic anemia. The proctoscopic examination revealed a contracted lumen of the rectum and sigmoid and changes in the mucous membrane characteristic of ulcerative colitis. There was considerable mucopurulent exudate which on microscopic examination showed numerous leukocytes and red blood cells but no amebae. Roentgenologic examination of the colon by barium enema showed a diffuse generalized loss of haustral markings, contraction in the length and caliber, loss of flexibility, and changes in the mucosal pattern (Fig. 6).

The diagnosis was chronic ulcerative colitis.

The insidious onset of diarrhea, rectal bleeding, or both is characteristic of ulcerative colitis.

The recurrent bouts and remissions are more suggestive of colitis than of malignant disease of the bowel. The conclusive diagnosis, however, depends upon the characteristic roentgenologic and proctoscopic findings, which may be somewhat variable, depending upon the severity and duration of the disease.

Acute severe ulcerative colitis is characterized by marked spasm, which prevents complete filling of the bowel with the barium enema. There are also typical changes in the mucosal pattern, which are shown best in the descending colon.

**Case 7.**—A man, aged 52 years, complained of diarrhea of four years' duration and recent rectal tenesmus. There were six to eight watery stools a day. Streaks of blood and mucus often were seen. He had been able to work and had not lost weight. He gave a history of amebic dysentery twenty years previously while in Egypt, with subsequent spells of diarrhea at long intervals.

The physical examination was negative. The blood was normal. The proctoscopic examination revealed a small amount of serous bloody fluid in the rectum. The mucosa was thickened, inflamed, and ulcerated in some areas and practically normal in others. A small drop of fluid was removed from the rectum, mixed with normal salt solution, and examined under the microscope. Many motile amebae containing red blood cells were seen.

The blood examination showed a slight anemia. Roentgenologic examination by barium enema showed diffuse spasm of the colon but no diagnostic organic changes. Injections of emetine were given intramuscularly, and with the first injection the rectal tenesmus was relieved and the bowel function became normal within a few days.

The diagnosis was amebic dysentery.

This case illustrates the following important points in the diagnosis of amebic dysentery:

1. The disease may be encountered in any climate.
2. It may remain latent for a long time.
3. The proctoscopic findings may not be diagnostic, but the areas of normal mucosa interspersed with areas of inflammation and ulceration are highly suggestive of amebiasis instead of chronic ulcerative colitis, in which the mucosa is diffusely involved with no areas of normal mucous membrane.
4. The proctoscope provides an easy method of obtaining a suitable specimen for immediate microscopic examination, which is the conclusive diagnostic test in this disease.
5. The therapeutic test with emetine is sometimes striking.

The motile phagocytic form of the pathogenic ameba is found in the rectum or in the stools only in the presence of diarrhea or following catharsis. Patients with chronic amebiasis without diarrhea



Fig. 7. Roentgenogram of the small intestine showing a dilated loop of jejunum proximal to an annular defect produced by carcinoma of the jejunum.

may have only the encysted forms of ameba in the stools.

**Case 8.**—A man, 46 years of age, complained of intermittent attacks of extremely severe cramp-like upper abdominal pain accompanied by vomiting. These attacks had occurred about once a month for four months. He was known to have a chronic duodenal ulcer, but the presenting symptoms were different from all previous ulcer distresses.

The physical examination was negative. The blood was normal. Roentgenograms at hourly intervals after a barium meal showed a dilated loop of jejunum in the lower abdomen. At the distal tip of the dilated loop there was a cuff-like deformity characteristic of intussusception.

The diagnosis of small intestinal tumor with intermittent obstruction was confirmed by operation. The pathologic diagnosis was tuberculoma of the ileum.

This case is illustrative of the typical symptoms produced by small intestinal tumors, particularly benign tumors which are not fixed. Severe pain occurs in the upper or midabdomen and lasts for several hours. Between attacks there are no symptoms. Intermittent intussusception with obstruction is produced by the peristaltic action upon the tumor which forces it downward into the lumen of the lower loop, dragging with it the upper loop to which it is attached.

**Case 9.**—A man, aged 31 years, complained of acute attacks of severe, cramp-like upper abdominal pain lasting several hours and accompanied by vomiting. The attacks had occurred at intervals of sev-





FIG. 8. Roentgenogram of the small intestine showing a large irregular cavity in the jejunum as a result of neurofibrosarcoma.

eral weeks over a period of nine months. Between attacks he was perfectly well. Two years before, a subtotal gastric resection for chronic duodenal ulcer had been performed.

The physical examination was negative. The blood and urine examinations were normal. Gastrointestinal roentgenograms, including several films of the small intestine, were negative. The patient was advised to have a plain film of the abdomen in the upright position during the next attack. This showed dilated loops of small intestine in the right lower quadrant with fluid levels. Another barium series showed delayed motility and dilatation of the small intestine.

The diagnosis of intermittent small-intestinal obstruction was confirmed by operation, which disclosed obstructing adhesions involving the upper ileum, which was adherent to the abdominal wall.

*Case 10.*—A man, aged 61 years, complained of generalized cramp-like abdominal pain and vomiting of six weeks' duration. The ingestion of food caused pain and vomiting. Although the appetite was good, he had eaten and retained very little, with the result that he had lost 40 pounds in weight.

The physical examination was negative. The blood examination was normal. The stools were strongly positive for occult blood. Roentgenograms of the gastrointestinal tract after a barium meal showed an annular constriction in the jejunum with dilatation of the bowel above this point (Fig. 7). There was "hooking" of the barium column around



FIG. 9. Roentgenogram five hours after a barium meal, showing the typical narrowing and mucosal changes of the ileum in a case of regional ileitis.

the stricture. Barium was retained in the small intestine for twenty-four hours.

The diagnosis of carcinoma of the jejunum was confirmed by operation.

This annular malignant tumor was symptomless until the gradual narrowing of the lumen produced an unrelenting obstruction without intussusception.

Although the presenting symptom of malignant disease of the small bowel is usually obstruction, there are some malignant tumors which produce ulceration and cavitation without obstruction, in which case anemia and cachexia are the most prominent features.

*Case 11.*—A man, aged 37 years, complained of weakness and anemia of ten years' duration. The anemia was extremely severe and was getting progressively worse, requiring several transfusions. He had some vague abdominal distress but no severe pain or vomiting. In recent months there had been some fever, and the spleen was enlarged.

The patient was subjected to extensive study in the hospital to determine the nature of what appeared to be a blood disease. The stools contained occult blood, and after several transfusions he had a hemorrhage into the intestinal tract. Gastrointestinal roentgenograms, including films of the small intestine, showed a marked deformity, apparently a large irregular cavity in the lumen of the jejunum (Fig. 8).

A diagnosis of an ulcerating tumor of the jejunum was made. Operation revealed a neurofibrosarcoma arising in the retroperitoneal region near the ligament of Treitz, with ulceration into the jejunum.

*Case 12*—A woman, aged 24 years, complained of generalized cramp like abdominal pain of four months' duration. The pain was sharp, occurred daily, and was brought on by meals. It was accompanied by vomiting and diarrhea of from four to eight stools a day. She had lost about 50 pounds in weight.

The physical examination was negative. There was no fever. The blood examination showed slight leukocytosis. The proctoscopic examination was negative except for a soft foamy stool in the rectum. The stool cultures and microscopic examinations were negative. Serial roentgenograms of the small intestine after a barium meal showed delay and dilatation with rigid narrowing of the terminal ileum (Fig. 9).

The diagnosis of advanced terminal ileitis with obstruction was confirmed by operation.

This is a case of diarrhea and abdominal pain caused by disease limited to the small intestine. The roentgenologic evidence of chronic ulcerative enteritis is variable, depending upon the severity of the disease, its extent and distribution, and the stage of the pathologic process.

In terms of incidence, the acute gastrointestinal upset, characterized chiefly by diarrhea and commonly known as "intestinal flu," ptomaine poisoning, and summer complaint, is an important clinical entity.

*Case 13*—A man, aged 38 years, complained of diarrhea and malaise, which began five days previously with a chill, temperature of 103 F., and diarrhea. Nausea, weakness, and generalized aches and pains were present. On admission the diarrhea had subsided to five or six stools a day.

The physical examination was negative. The temperature and blood examination were normal. The proctoscopic examination showed a normal mucous membrane. Stool culture showed no pathogens. Widal and agglutination tests for dysentery were negative.

The diagnosis was acute enterocolitis. With bed rest, a bland diet, and sulfaguanidine therapy, all symptoms disappeared in three or four days.

This case is an example of one of a number of intestinal disorders which may be grouped under

the heading of acute diarrheal disease. Sporadic cases appear in the practice of every general practitioner and epidemics are common, particularly in institutions and camps. While the disease as it occurs in the adult is not usually dangerous, in the infant or young child it often is a serious threat to life.

A clinical and causative classification of the diarrheal diseases has been prepared by Hardy and Watt.<sup>1</sup>

The first group, called primary infectious diarrhea, includes the dysenteries caused by pathogens which establish themselves and grow in the enteric tract. These include bacillary dysentery, acute amebic dysentery, food infection, cholera, other bacterial infections, and parasitic diseases.

The second group, called parenteral and secondary diarrhea, includes those cases in which the intestinal disorder is simply a symptom of a remote disease, such as an acute respiratory or generalized infection.

The third group, called noninfectious diarrhea, includes food poisoning, sewage poisoning, nutritional diarrhea, and allergic diarrhea.

The diagnosis of acute enterocolitis often, of necessity, covers a number of causative possibilities. It is based chiefly upon the clinical features, such as the acute onset, the short duration, and the prominence of general systemic effects with coryza, malaise, vomiting, prostration, and fever. The differential diagnosis of acute enterocolitis can be made only by the isolation from the stools of the specific causative agent, but in a considerable percentage of these cases the cultures are negative. Also, agglutination tests with the patient's serum are too unreliable to be of much value. The important consideration in cases of this kind is that acute enterocolitis should clear up within three to four weeks, and if it does not, a thorough study for other forms of intestinal disease is indicated.

It is beyond the scope of this paper to cover more than a few of the most common disorders of the intestine. However, the same diagnostic principles apply in part, at least, in the diagnosis of any of the rare forms of intestinal disease.

<sup>1</sup> Hardy A. V. and Watt James. JAMA 124 1173 (April 22) 1944.

#### KENNY INSTITUTE DRIVE WILL SEEK \$1,702,000

A nation wide campaign to raise \$1,702,000 to make the Sister Elizabeth Kenny treatment of infantile paralysis available to all victims will be conducted from November 13 to 25. This was announced by Marvin L. Kline, president of the Kenny Institute and Mayor of Minneapolis, on September 25.

The fund also will be used for training of technicians, clinical research on paralysis and other neuromuscular disorders, and extension of the Kenny method to other nations, Mr. Kline said.

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MAC F. CAHAL, J.D., Chicago

ANY casual reader of medical literature and the writings of political economists during the past ten or fifteen years cannot fail to be aware of a growing demand, throughout the world, for improvements in the distribution of medical services. New economic theories and the increasing exigencies of society have created currents within and about the medical profession that are testing its very foundations. It seems unlikely that the system of medical practice as we have known it in this country will be left unchanged when the currents subside. The powerful social forces and the evidences of intraprofessional unrest currently being manifested in the United States can be observed in all the English-speaking nations on the globe.

It is not my purpose here to discuss the question of socialized medicine or the fundamental issues involved in the social economics of medicine, important and interesting as that subject may be. I would emphasize, however, that all the problems created by change and adjustment in the economics of medicine have origins that touch these basic issues. The problems of radiology should be viewed in their relation to the problems confronting all medicine. And we should never forget that the profession of medicine owes its existence to the service it renders the sick. In examining the problems confronting practitioners of the specialty of radiology, therefore, we should not lose sight of the fact that principles espoused by medicine are tenable only so long as their ultimate objective is to improve the standards and quality of medical care for the consequent benefit of the public health.

Among the many factors contributing to the unsettled state in which medicine finds itself today, there is one which holds special significance for radiology. I refer to the unmistakable trend for hospitals to expand their functions and to assume more and more responsibilities in the delivery of medical services. This particular subject has been my special interest for most of the past ten years. It is my earnest conviction that the issues must be squarely faced by both hospitals and doctors and that agreement must be reached upon certain fundamental principles if we are to avoid the grave harm that continued controversy will bring to the interests of both parties, as well as to the public welfare.

Whether deliberately or not, current tendencies

on the part of hospitals find their keynote in the first recommendation made by the Committee on the Costs of Medical Care. In 1932, the Committee recommended that medical care be furnished by groups organized around a hospital. Thus, the hospital becomes not merely a specially equipped institution where doctors may administer to the sick, but a distributing agency for medical care. The hospital itself enters the practice of medicine through the medium of employed agents.

Official statements appearing in the hospital literature from time to time in recent years give conclusive proof that this is exactly the conception of the hospital's function to which many leaders in the hospital world adhere. From scores of similar statements, I quote the following examples.

"Provision of medical services in the hospital is part of the responsibility of the hospital."

"Diagnosis, treatment, and care of the ambulatory sick become increasingly the function of the hospital, as the hospital develops into the center of community health activities."

"From the standpoint of logic, common sense, and welfare of the public it is clear that hospitals should be permitted to practice medicine as they have for many decades."

Now, without pausing to debate the merit of such arguments here, it should be noted that the medical profession has, with considerable emphasis, expressed an opposite view. Taking cognizance of the gradual trend toward the institutionalization of medicine through the encroachments of hospitals, the Judicial Council of the American Medical Association in 1936 issued a strong statement to the effect that:

"It would seem that in this time of extensive changes in hospital economics the point had arrived at which further marriages between hospitals and staff physicians that make the doctor of medicine the servant of the hospital should be stopped, and a series of attempts at divorce among marriages that have already taken place should be instituted. It is not an impossible task but will need a militant local and national ethical spirit behind it and a frowning on those individuals in the profession who, on personal grounds, do not object to the gradual subjugation of the medical profession in the growth of hospital domination."

Summing up a series of similar pronouncements adopted year after year by the American Medical Association, the House of Delegates last year adopted a recommendation that "The House em-

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 11, 1944.

phically reiterate that it disapproves the injecting of a third party into the personal relationship of the patient and the physician, and that hospitals should not be permitted to practice medicine."

And to clear up any doubt about what it meant by this statement, the House went further to say that "The practice of radiology, pathology, and anesthesiology is the practice of medicine just as much as is the practice of surgery or internal medicine and it is only a short step from including the first three in a hospital service plan to including the whole field of medicine in such a plan."

Everyone knows that the reaction of hospitals to such unequivocal demands has been one of polite indifference. There has been no visible reluctance on the part of hospitals to assume more rather than fewer prerogatives as a purveyor of medical care. The number of strictly medical services performed by hospitals has certainly increased rather than diminished.

Are we, then, to accept as correct the prediction of Arthur J. Altmeyer, chairman of the Social Security Board, that hospital superintendents will, in the future, sit at the head of medical groups which practice medicine for and under the domination of hospitals? At the last annual meeting of the American Hospital Association Mr. Altmeyer expressed the opinion that

"We can be confident that in the future, even more than in the past, the hospitals will be the center of coordinated services for the well and for the sick, a community center for prevention as well as for diagnosis and cure. Coordinated with clinics and health centers for those who do not need bed care, working in effective relations with the community wide facilities of the public health agencies and interlocked with the educational institutions of the universities and medical schools, the hospital of today is the health center of the future. There are new and larger opportunities ahead for the hospital administrator."

"Those who would make of the hospital a building in which to furnish bed, board, nursing, and only technical services, and who propose to separate professional services from hospital care, are flying in the face of experience and progress. They would not merely stop the clock—they would turn it back. Their view cannot and should not prevail."

Certainly, if we are not to delude ourselves, we must admit that the trend is in the direction described by this observer. It is said that trends are changed by the will of men, but we would be naive to deny that hospitals are in an enormously powerful position. As the result of technical advancements in medical practice during the past several decades, hospitals are today in the position of controlling the capital plant which modern medicine requires. Hospitals are gradually

becoming the employers and doctors the employees in a system of medical practice that assumes some of the characteristics of big business in contrast to the traditional characteristics of an individualistic profession. The signs are unmistakable. The trend has so far progressed that there are many people today who go to a hospital when they are sick instead of to a doctor.

Now, I have so far endeavored to review some historical developments during which there has occurred a radical change in the functions of the hospital, without assuming that the change is either good or bad. That is a question which I am not prepared to answer. The social concepts involved are so profound, the forces at work are so powerful, the scientific factors so complex, that one cannot categorically say at this time that the centralization of medicine within the administrative framework of a corporate hospital is inherently or inescapably bad. I think that it is bad and that such a system would not long be tolerated by the majority of the American people. I believe that the interjection of a third party between doctor and patient, whether that third party be a political bureau, a commercial corporation, or a charitable hospital, creates a divided loyalty and a difference of purpose that is not to the best interests of the patient. The great majority of physicians are of a similar philosophy. Only time and the decrees of society will determine whether their views or the views of those who advocate the practice of medicine by hospital corporations through groups of salaried physicians shall prevail.

Of one thing, however, I am absolutely certain. I entertain no doubt that the addition of the insurance principle to this kind of practice would result in a type of medical care that would be egregiously bad. One has only to examine the disgraceful conditions which characterized the old "lodge practice" to find abundant proof of the fact that the sale of employed physician's services on a prepayment basis invites abuses that tend to destroy the value of the doctor's services.

This brings me to a consideration of group hospitalization, because, by insisting upon the inclusion of certain medical services among the benefits guaranteed by the Blue Cross, hospitals are repeating the errors committed in the past by those

ing objection of the medical profession to any sickness insurance plan in which benefits in kind are furnished by salaried agents.

Organized medicine has never opposed group hospitalization insurance. It has steadfastly condemned all insurance plans which guaranteed the services of employed doctors as a benefit in

kind to subscribers. Repeatedly the American Medical Association has demanded that the services included in Blue Cross plans be confined to hospital care and accommodations. There is a compendium of resolutions adopted by the House of Delegates of the American Medical Association since 1931, filling more than ten crowded pages, objecting to the inclusion of any type of medical care in Blue Cross benefits. The result, as you all know, has again been an attitude of polite indifference.

In 1937, the Medical Society of the State of New York adopted a set of principles to govern hospital groups in the creation of prepayment plans for hospital care. This Society defined hospital care as "provision of bed, board, general nursing service, customary surgical dressings and medicines, and other facilities of the institution, not including medical care." Then, to leave no room for doubt, the Society defined medical care as "any procedure or service by a licensed physician." Hospitals were requested not to "implicate themselves with conditions inconsistent with the principles and definitions herewith stated."

On June 21, 1939, in view of the open disregard of this request by the Associated Hospital Service, representatives of the county medical societies in the metropolitan New York area issued a joint statement objecting to the inclusion of radiology and pathology among the benefits furnished by the Associated Hospital Service.

On June 9, 1943, the House of Delegates of the American Medical Association adopted the recommendation of its reference committee that "The practice of radiology, pathology, and anesthesiology is the practice of medicine just as much as is the practice of surgery or internal medicine, and that it is only a short step from including the first three in a (hospital) service plan to including the whole field of medicine in such a plan." And, on the same date, the House of Delegates once again emphatically and unequivocally demanded that radiology and pathology be excluded from group hospitalization benefits.

On July 19, 1943, the Associated Hospital Service of New York announced that benefits were being extended by offering complete x-ray examinations without limitation, and complete pathologic service.

Thus, we are provided with rather convincing proof of the fact lamented by the A.M.A. House of Delegates when it said last year "That the Blue-Cross plans to give medical service with or without the approval of the medical profession."

This is unfortunate. Blue Cross is never going to enjoy the growth it seeks until it wins the approval and support of the medical profession. That approval and support will be forthcoming

when, and only when, the services of all physicians are excluded from the service benefits which hospitals guarantee to provide subscribers in their contract with the Blue Cross.

Hospital spokesmen present three arguments to justify their open disregard for the expressed wishes of the medical profession in this matter:

1. Most radiologists, pathologists, and anesthesiologists, they say, are employees of the hospitals in which they work; hence it makes little difference whether the hospital collects for their services from the individual patient or from an insurance corporation.

2. The plan cannot be sold unless these special services are included.

3. Patients customarily regard radiology and these other services as a part of their hospital care and would object if they were not covered with their hospital bill.

Now, the last of these arguments, unfortunately, is difficult to deny. Whether we like to admit it or not, the fact is that patients have come to regard a hospital x-ray examination as a function of the hospital. Indeed, many patients, when discharged from a hospital, are not aware that they have received the services of a medical specialist when they pay for an x-ray examination along with their hospital bill.

But the solution is not to perpetuate this improper condition. It should be corrected, and it will be corrected if hospitals will cooperate in following the recommendation of the American College of Radiology that charges for x-ray services in the hospital be collected in the name of the physician rendering the service.

The first and second arguments are thoroughly specious. The fact that a considerable number of radiologists are in the legal position of employees of their hospitals is completely beside the point of issue. The issue is not whether they are employed servants of the hospital, but whether their services shall be sold on a prepayment basis to several million potential patients. Contrary to the familiar claims of Blue Cross directors, a radically new factor is imposed upon existing arrangements when hospitals contract to deliver the services of their radiologist to insured subscribers for a fixed per diem rate from the insurance corporation. This type of practice has been condemned by the medical profession for more than thirty years, and I dare say there will be no retreat from its strenuous opposition. True, doctors contract to provide benefits in service when they participate in medical service plans, now being so energetically promoted by medical societies. But in medical service plans the doctor is the insurer; in hospital service plans which include medical benefits a third party, the hospital, is the insurer. The difference is profound.

The second argument is even less sound. Blue Cross can be sold without including radiology. More than half the approved plans in the country have acceded to the demands of the medical profession by confining their benefits to strictly hospital services, they enjoy the approval and support of their local medical societies, and seem to be doing very well.

Nevertheless and notwithstanding, some of the larger plans, including the Associated Hospital Service of New York, which alone accounts for one tenth of the total national enrollment, continue to disregard the principles and the entreaties of the medical profession. An unrelenting battle has been carried on here for nearly ten years, during which the Blue Cross plan has continuously refused to comply with standards set up by national, state, and local medical bodies.

Well, where does that leave us? Hospitals and doctors have apparently reached an impasse over divergent principles. Let me emphasize here that the issue concerns the principle at stake. The inclusion of radiology as a hospital benefit in Blue Cross is not the important issue, it is the precedent which will be established by sacrifice of the principle and its implications for all of medicine that is important.

Already there is evidence of what this precedent will mean to future generations of doctors. In the Federal program of obstetric and pediatric care for enlisted men's families, radiology is included among the hospital services to be provided for a fixed per diem rate. Proposals for the care of World War II veterans in private hospitals contemplate x-ray services as part of the care for which hospitals will be reimbursed under an inclusive fee. The Wagner-Murray-Dingell bill defines hospital care as including x-ray services, all to be furnished for a fee not exceeding \$6.00 per day. (Incidentally, the British White Paper recently submitted to Parliament by the Minister of Health regards radiology as a part of hospital care.)

Let us consider for a moment the profound implications which this question possesses for other medical specialties. Blue Cross plans are currently preparing to embark upon programs offering complete medical or surgical care in addition to hospitalization. The proposal is to pay cash benefits to participating physicians and surgeons. But if a hospital can collect from the insurance corporation for the services of a radiologist, what is to prevent it from restricting its staff to salaried surgeons and collecting from the insurance corporation for their services?

Unfortunately, in the State of New York, nothing would. A considerable amount of loose talk has been indulged in by various hospital administrators in this area who have essayed to

settle the legal issues involved in relations between doctors and hospitals. Mostly they have proved nothing more than that law is better understood by lawyers than by doctors or hospital superintendents. But the fact is that the New York Court of Appeals, in interpreting the statutes of this State, has ruled that hospitals are not subject to the common-law prohibitions against the practice of medicine by corporations.

The courts, therefore, offer no remedy to radiologists who object to the ancillary position to which Blue Cross would relegate them. But they are not without remedy. Several alternative steps merit consideration.

In the first place, radiologists should not delay efforts to arrange for the collection of charges for x-ray examinations performed in the hospital in the name of the physician rendering the service. I have already stated that this has been recommended by the American College of Radiology. It is also consistent with principles promulgated by the American College of Surgeons and the American Medical Association. If, instead of seeing an item "x-ray" on his hospital bill, a patient finds a charge for "x-ray examination by Dr. Blank and consultation with Dr. White (the attending physician who ordered the examination)," he will not assume that x-ray services are part of hospital care, and Blue Cross could no longer justify inclusion of radiology on this ground.

The growth of medical service plans offers, in my opinion, the most promising opportunity for divorcing radiology from hospital care and placing it with medicine, where it belongs. If the medical or surgical care plan includes radiology among the services provided, there will be no justification for retaining it as a benefit in Blue Cross.

Or, if this is not possible, a desirable compromise might be reached here as it was in the State of Washington, where Blue Cross pays cash benefits on a fee basis for radiology. I have been informed by the director of the Hospital Service Commission of the American Hospital Association that the separation of radiology from hospital care in this manner would meet with the approval of the hospital association.

There is yet another step, which I hesitate to mention, but which sometime in the future may be forced upon radiology, and perhaps other branches of medicine. I hope that the doctor can adjust his principles to the forces of social and economic change without divesting himself of the priestly robe which is his tradition. But it is not inconceivable that we shall live to see the day when doctors turn to the union as a means of protecting their standards and their welfare. If the bulk of the population becomes enrolled in

a plan, either voluntary or compulsory, in which radiology is treated as a part of hospital care and all radiologists thus become virtual hirelings of hospitals, which retail their services on an insurance basis, the technics of organized labor may provide the only means available for preservation of their principles. Within the past six months a national association of doctors has been formed for the purpose of pursuing union methods. At least one state medical society has seriously proposed that the A.M.A. affiliate with organized labor.

Of course, medicine can never utilize the strike as a means to gain its ends, but, if radiologists were organized in a union, the controversies raised by their relations with hospitals would be very swiftly resolved. Of that you can be sure.

Please do not misunderstand me. I am not here making a proposal. I am utterly sincere in my belief that no principle of medicine is worth preservation unless it is founded upon considerations that place the public welfare above the welfare of doctors. I mention this alternative merely as a not inconceivable eventuality.

At the opposite extreme I would mention another suggestion that has occurred to a number of sound thinkers in radiology. Dr. B. R. Kirklin, for example, in speaking before an American College of Surgeons meeting some years ago, considered the desirable results that would follow a reduction in fees charged by radiologists.\*

There is no denying that current agitation for radical innovations in our system of medical care is largely engendered by the alleged high cost of sickness. The treatment of disease is a more expensive process today than it was twenty years ago. It is paradoxical that the enormous contributions which specialties such as radiology have made to modern medicine have increased the cost of sickness by multiplying the valuable aids which

medical men have at their disposal for improved methods of diagnosis and therapy. I am inclined to agree with Dr. Kirklin in urging that radiologists seriously deliberate the possibilities of reducing the cost of x-ray diagnosis by any means that is consistent with service of high quality. There is good reason to believe that the income of radiologists would be increased rather than decreased if the cost of roentgen consultation were reduced.

If the cost of x-ray examinations could be decreased, a more recent threat confronting this specialty would likely be removed. During the past several years there have been frequent proposals, both by laymen and medical men, for tax-supported "diagnostic centers" to which clinicians could refer patients for a free or low-cost "work-up." I wonder how many radiologists are aware that the president of the American Medical Association, in his inaugural address last year, advocated state diagnostic centers to provide x-ray and laboratory service? One state medical society has very recently adopted resolutions requesting the state public health department to provide free diagnostic services for patients, regardless of their financial status. Personally, I am not seriously alarmed by the imminence of this threat to the private practice of radiology, but it is a development that should be neither minimized nor ignored.

Whatever policies the specialty of radiology adopts, and whatever methods it pursues in efforts to preserve the standards it has erected for its disciples, it is imperative that radiologists resolve their differences of opinion and devote their full energies to the advancement of the principles of good radiologic practice. One thing must be recognized as essential: practitioners of radiology must maintain a unified front through active local societies and a strong national body that can project their concepts in the deliberations of national agencies that will help to shape the order of things to come.

Thus armed, they can face the future with the confidence and fortitude urged by Sir William Osler when he advised physicians to meet their common problems "with the reinforcement born of hope, or the strong resolution of despair."

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\* EDITORIAL COMMENT: The Workmen's Compensation Fee Schedule of New York State represents a 20 per cent reduction on normal or usual fees for diagnostic radiology. This schedule was accepted by radiologists of New York because it represents a net or "no collection loss" basis of remuneration. This is the presently applied schedule in use by the nonprofit medical expense insurance companies of New York State.—*Alfred L. L. Bell, Chairman, Section on Radiology.*

#### GRANT FOR MENTAL HYGIENE

The Commonwealth Fund has given \$10,000 to the National Committee for Mental Hygiene to provide fellowships to train psychiatrists for work with children. Both basic training and advanced study as well as refresher courses will be provided by the fellowships.

#### LIBRARY ACQUIRES RARE VOLUME

Acquisition of a copy of the 1555 edition of *Fabrica de Humani Corporis* by Andreas Vesalius, one of the oldest existent textbooks on anatomy, for \$700 has been announced by the State Medical Library. Maud Nesbitt, librarian, said the wood-bound volume would be stored in a vault.

# PLATYBASIA AND OCCIPITAL VERTEBRA CAUSING FORAMEN MAGNUM ENCROACHMENT AND RESULTING NEUROLOGIC SYMPTOMS

LEE A. HADLEY, M.D., Syracuse

**C**ONSTRICTION of the foramen magnum by certain congenital conditions has been shown to produce progressive neurologic symptoms simulating, among others, multiple sclerosis, syringomyelia, and progressive spastic paralysis. Since these congenital abnormalities of the upper cervical region are amenable to surgery, careful radiographic studies should be undertaken of all patients supposed to be suffering from one of these hopeless neurologic conditions.

The skull base is said to originate from a fusion of at least three embryologic cervical segments or scleromeres. Any level of the spine may at times congenitally assume the characteristics of that level immediately above or below it, so that a complete or partial atlanto-occipital fusion may take place. More rarely one sees the opposite tendency, that is, for the lowermost segment of the base of the skull to assume the vertebral form, the so called occipital vertebra. In both of these conditions a constriction of the foramen magnum is likely to be present.

With atlanto-occipital fusion the neural arch of the atlas may or may not be complete posteriorly. It may be fused to the occiput in one or both sides. Flexion-extension studies will show that it does not separate from the base of the skull upon extreme forward flexion. Fusion of two or more cervical segments is likely to be present. Displacement of the odontoid process upward into the foramen magnum decreases the A-P diameter of this opening and its shape may become distorted. The resultant flattening of the bialar area is spoken of as a congenital platybasia.

The required type of platybasia is secondary to softening of the base of the skull as in Paget's Disease, osteomalacia, or hyperparathyroidism. The skull base is invaginated by the cervical spine like a thumb pressing against a soft rubber ball, thrusting it upward into the posterior fossa. With this bialar impression the occiput is convex upward, showing as a reverse curve. The foramen magnum may be as high as the petrous pyramids and funnel shaped, but not necessarily distorted in outline. The base does not fuse with the occiput, and flexion-extension studies show a movement between the skull and the atlas. Operation is probably not indicated in the acquired type.

Common to both types is the high position of the first cervical segment above the line from

the hard palate to the posterior margin of the foramen magnum described by Chamberlain. The petrous pyramids are raised above their normal position and distorted in shape. The clivus is nearly on a plane with the floor of the anterior fossa. The neck is short, with lessened movement of the head, which may be carried at an angle. There is likely to be exaggeration of normal anterior cervical curve, in which case the foramina will be smaller than usual.

Elevation of the base of the skull, like a piston, into the posterior fossa, limited above by the firm tentorium, may produce compression by the cerebellum and force a part of its substance to herniate downward into the cervical canal, simulating the so called Arnold Chiari malformation. There is likely to be compression of the cord of cranial nerves.

## Occipital Vertebra

This condition results from incomplete assimilation of the most posterior of the three scleromeres which form the base of the skull. That is, the area about the foramen magnum assumes certain features resembling a vertebral segment. (1) There is a hypochordal arch, partially or completely fused to the anterior margin of the foramen magnum, and (2) a partial or complete neural arch outlined about the dorsal surface of the foramen. (3) Transverse processes may or may not be present—more or less fused to the base of the skull. If present they do not bear a foramen for the vertebral artery. (4) These masses, bearing the condyles, may or may not encroach upon the foramen, distorting its shape. (5) The condyles resemble those of the normal subject. (6) The so called third condyle, *ossiculum terminale*, may be present in the anterior portion of the foramen. This is a separate ossicle developed from the notochord in the terminal ligament of the odontoid and may embryologically in the normal subject form the tip of this structure. Analogous to the relationship between the atlas and the dens, the third condyle corresponds to the body of the occipital vertebra with the hypochordal arch in front and the neural arch behind.

## A Case of Occipital Vertebra

An 11-year old girl studied by the author showed the following neurologic symptoms:

Although the temperature and tactile perception were normal on the right side of the body, on the



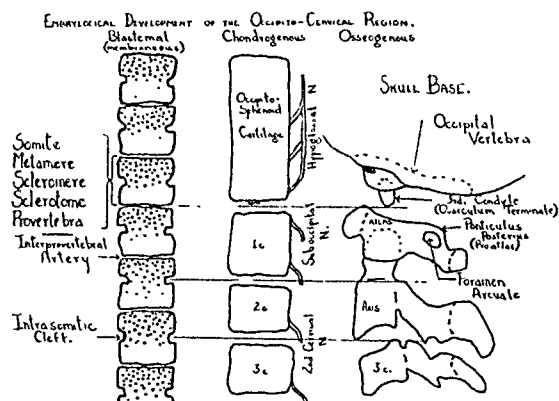


FIG. 1. Diagram illustrating the three stages of embryologic development. Three of the original somites are incorporated into the base of the skull. The atlas originates from  $1\frac{1}{2}$  segments, while each vertebra below that is said to arise from a caudal and cephalic half of two adjacent somites. The intervertebral artery separates the different somites and later supplies the vertebral bodies, while the intrasomatic cleft marks the point where the intervertebral disk eventually develops. Since the nerves develop from the more densely staining anterior portion of the somite, each vertebral segment has one pair, except the first cervical, which has two pairs. The odontoid process of the axis actually originates as the vertebral body of the first segment but later fuses with the second. At times the posterior atlanto-occipital ligament ossifies, forming the ponticulus posterius arching over the foramen arcuale, which transmits the vertebral artery and suboccipital nerve. This bony arch is said to arise from the extra half somite of the first cervical segment and corresponds to the pro-atlas of certain vertebrates. The ossiculum terminale develops from the lowermost segment of the occiput in the terminal ligament of the odontoid. It may even be fused with and form the tip of that structure. The so-called occipital vertebra, if present, is seen as a tendency for the lowermost occipital segment to assume certain features of a cervical vertebra surrounding the foramen magnum.



1. Foramen Magnum.
2. Ossiculum Terminale
3. Odontoid Process.

FIG. 2. Case of occipital vertebra. Diagram to illustrate relations of (1) saddle-shaped foramen magnum, (2) ossiculum terminale (third condyle), and (3) shortened odontoid process.

left side there was hypo-esthesia to tactile and pain stimuli and heat perception was lost, while cold was interpreted as a painful sensation of heat. Tendon reflexes were exaggerated on the right side and normal on the left. Abdominal reflexes were present on the right and absent on the left. There was a strong Babinski and some disturbance of coordination.

In this case the radiographs showed:

1. A normal atlas.
2. A broad, short odontoid process.
3. The posterior margin of the foramen magnum was thinned and below normal level. At operation this was found to bear, somewhat laterally, two cornua—indicating the rudimentary, incomplete neural arch.
4. The outline of the foramen magnum was shaped like a bicycle seat. This was caused by two

bony masses projecting from the sides of the foramen and encroaching upon its anterior portion.

5. The ossiculum terminale appeared within this narrowed portion as a distinct oval-shaped ossicle entirely separate from the odontoid.

Laminectomy of the first and second arches and enlargement of the foramen magnum were done by Dr. Ward Williams. This revealed a circular fibrous constriction of the dura at the level of the foramen. As this was dissected away in layers there was a progressive expansion of the dural sheath to its normal diameter.

Recovery was uneventful and two months later the child returned to school. Six months past operation, the Babinski was no longer present, but the other neurologic signs had remained unchanged. It is probable, however, that the progressive development of further neurologic symptoms has been prevented.

Fourteen months after operation, re-examination of this child revealed the neurologic findings to be essentially unchanged.



FIG. 3. Case of occipital vertebra. Foramen magnum shaped like a bicycle seat, narrowed in front by masses projecting into its lumen from each side.



FIG. 4. Ossiculum terminale (retouched) partially overlying the shortened odontoid.

### Conclusion

Foramen magnum distortion with confusing neurologic symptoms may be caused by atlanto-

occipital fusion (basilar impression, platybasia) or by an occipital vertebra. These latter conditions can only be diagnosed by careful radiographic studies.

### OFFICE OF VOCATIONAL REHABILITATION

The appointments of Dr. Victor H. Vogel, Surgeon, U.S. Public Health Service, as consultant in psychiatry, and Dr. Mark E. Gann, Surgeon (R), U.S. Army, as representative of the Federal Bureau of Investigation, Office of Vocational Rehabilitation, to the Office of Vocational Rehabilitation, U.S. Public Health Service, will include the organization of programs for the rehabilitation of persons with psychiatric disabilities, and mental hygiene programs for all handicapped persons who are clients of State rehabilitation agencies. The Federal-State grant-in-aid program for the voca-

### APPOINTS TWO PHYSICIANS

pital, 1937-1938, and at the Johns Hopkins Medical School, 1939-1940. He is a diplomate of the National Board of Neurology and Psychiatry and a Fellow of the American Psychiatric Association. Dr. Vogel served as assistant chief, Mental Hygiene Division, and mental hygiene consultant to the States, U.S. Public Health Service, 1940-1942.

Dr. Gann has been assigned to the Office of Vocational Rehabilitation to assist in the inauguration of the interpretation of the vocational re-

western area. Dr. Gann is a graduate of the Johns Hopkins School of Medicine, 1933. He received training in surgery at the Sinai Hospital, Baltimore, Maryland, 1933-1938, and engaged in the private practice of general surgery in Baltimore from 1938 to 1943.

Prior to his assignment to the Office of Vocational Rehabilitation, Dr. Gann's field of active duty with the U.S. Public Health Service included industrial surgery and participation in the medical care project in the Mobile, Alabama, War Housing Clinics.

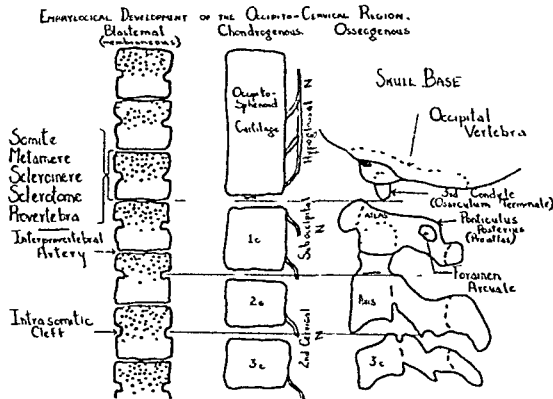
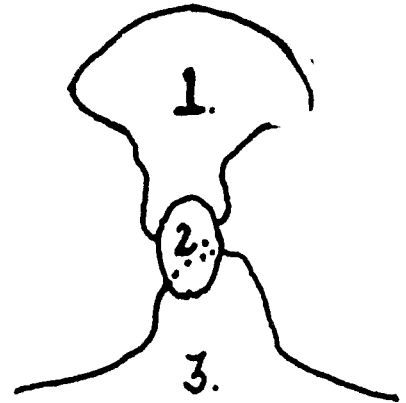


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Microscopic examination of the specimen showed that the lesion was cystic. The lumen was partly filled with debris. The inner wall was lined with stratified squamous epithelium. At one area this wall was replaced by a mass of granulation tissue.

#### Diagnosis epithelial cyst

The relationship of trauma to the production of epithelial cysts is accepted by many. King<sup>1</sup> reported 19 cases with a definite history of trauma in 12 cases. Wien and Caro<sup>3</sup> reported three cases with a definite history of trauma in 1 case and suggestive in 2. Buerger<sup>9</sup> reported 2 cases of epithelial cysts on the fingers following puncture wound with a needle. Boggs and Goodale<sup>4</sup> reported 2 cases, one of which followed puncture wound with a wooden sliver. Yiehmin and Summerill<sup>10</sup> report a case of epithelial cyst in the terminal phalanx of the right fourth finger following injury. Love and Montgomery<sup>8</sup> found only two cases of traumatic epithelial cysts in their series of 271 cases of epithelial and sebaceous cysts. In our group of cases there was a definite history of trauma with piercing objects in 2 cases.

While all writers on the subject admit that trauma plays a part in the production of these cysts, yet the method by which this is produced as well as the source of the epithelium is still controversial. Franke<sup>11</sup> was of the opinion that these cysts arise from stimulated embryonic cell rests and that trauma was the stimulus. Wien and Caro<sup>3</sup> and Reverdin<sup>12</sup> are of the belief that in the course of an injury bits of epidermis are implanted into the corium. The cyst then arises from this implantation. This view was supported by the experimental work of Kaufmann,<sup>13</sup> Scheveninger<sup>14</sup> and Davis and Traut<sup>15</sup>. These investigators were able to produce cysts in lower animals following implantation of epidermis. Peer,<sup>16</sup> and Peer and Paddock<sup>17</sup> on the other hand in their work on the fate of buried skin grafts in man were unable to show cyst formation. They were not of the belief that implanted epidermis following injury could produce epithelial cysts. Broders and Wilson<sup>6</sup> suggested that these cysts arise from the ducts of sebaceous cysts. Pels Ieusden<sup>18</sup> suggested that cystic lesions could be produced around foreign bodies. He suggested that a break in the skin was necessary for implantation of epithelium.

Epithelial cysts occurring on the palms can be easily mistaken for similar appearing lesions. The lesions which are commonly confused with epithelial cysts are ganglia, fibromata and sebaceous cysts. Ganglia occur on the dorsal surface

of the hand. They are larger and connected with a tendon sheath and contain a thick viscous fluid. Fibromata are solid tumors composed of fibrous tissue. Sebaceous cysts have a definite histologic picture and do not occur on the palms.

For the treatment of epithelial cysts all writers agree that complete surgical removal is the method of choice.

#### Discussion

In our group there was a definite history of trauma from piercing objects in 2 cases. In one of these cases there was a history suggestive of a foreign body. None was found on careful examination of the specimen after removal. His histologic examination of both of these specimens showed that one section of the wall of the cyst was replaced by granulation tissue containing giant cells of the foreign body type. This area, we believe, is the site of puncture with the object producing the break in the epithelium.

It is our belief that these cases support the theory of implantation of epithelium following injury. In the remaining cases the patients were engaged in occupations that required the constant use of their hands. Whether injury without any demonstrable break in the skin can produce such lesions is not clear. It is, however, possible that in the course of their work the patients may have suffered some trivial injury to the parts which could initiate these tumors.

#### Summary

Four cases of epithelial cysts of the palms are reported with a review of the pertinent literature.

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# SURVEY OF 116 CASES OF PNEUMONIA IN A HOSPITAL SERIES AND 22 CASES OF PNEUMONIA IN A COLLEGE INFIRMARY SERIES

## X-Ray Findings in Connection with Chemotherapy

CHESTER O. DAVISON, M.D., Poughkeepsie, New York

THERE seems to be a general impression that the sulfonamides clear up pneumonia clinically but leave considerable residue evident on x-ray films. An exhausting but not exhaustive search of the literature does not seem to bear this out. Some clinicians state that there seem to be more residual physical signs after clinical improvement than in "presulf" days.

Titelbaum<sup>1</sup> reports a series of several cases checked from thirty to seventy-seven days after the onset of resolution before a normal appearance on the roentgenogram could be noted.

A medical officer in one of the large Army camps stated "unofficially" that in virus pneumonia or primary atypical pneumonia it was observed that there was a very direct relation to the sedimentation rate and x-ray-demonstrable improvement. A clear film was to be expected following a drop in the sedimentation rate.

Recently Showacre, Wightman, and Moore,<sup>2</sup> in two articles on primary atypical pneumonia recording a careful study done at Cornell University, Ithaca, state in the second article: "Clinical improvement has been noted in the face of an apparent x-ray spread."

As applying to pneumococcus pneumonia, in response to a personal inquiry, Dr. William Tillet<sup>3</sup> of the New York University College of Medicine made this statement: "If pneumococcus pneumonia is not complicated by pleural effusion or factors which delay resolution or if the pneumonic infection is not superimposed upon some other pre-existing pulmonary disorder, it is my personal opinion that there is no lag in the x-ray clearing of pulmonary infections following chemotherapy."

In trying to find out something firsthand about the subject, we asked our record clerk at Vassar Brothers Hospital, Poughkeepsie, for 200 consecutive charts with a final diagnosis of pneumonia. Practically all of these patients had had some type of sulfonamide administered, and in a fairly regular pattern of dosage. "Virus pneumonia" appeared as a diagnosis only eight times. There were 51 typed pneumococcus pneumonias.

Eighty-two charts were excluded because they were incomplete, lacking such information as an x-ray or a white blood count and some because

the patient was admitted *in extremis*. We also reviewed 22 consecutive cases from Vassar College Infirmary which had been diagnosed as pneumonia, making a total of 140 included in this survey. These were divided into seven groups as follows (Chart 1):

Group T: All those with a positively typed pneumococcus.

Group A: No positive pneumococcus-type sputum. Temperature above 103 F.; white blood count level above 10,000; hospital stay twelve days or less. These factors were chosen arbitrarily after looking over a number of pneumonia charts.

Group A-1: Factors the same as in Group A but with a hospital stay of more than twelve days.

Group Q: Temperature 103 F. or more; white blood count level less than 10,000.

Group W: Temperature less than 103 F.; white blood count level greater than 10,000.

Group X: Temperature less than 103 F.; white blood count level less than 10,000.

Group V: This group consisted of the 22 consecutive cases diagnosed as pneumonia by Dr. Baldwin and her associates at the Vassar College Infirmary, extending from 1942 into 1944. All of these seemed to fall into the primary atypical pneumonia group. All of the patients had definite x-ray findings, low fever, low white blood cell count, comparatively long hospitalization, and all had some sulfonamide therapy.

## Hospital Stay as Affected by Sulfonamides

Discharge at twelve days would seem to be a good goal for the uncomplicated pneumonia treated by chemotherapy. The primary atypical pneumonias are reported to require longer convalescence than those due to the pneumococcus or other bacterial agents. In the infirmary group noted above the average stay was twenty-two days. However, in the Cornell group of 196 cases of primary atypical pneumonia it was only twelve days. A report from one Army camp of 382 pneumonias in a six-month period, in which primary atypical pneumonia was the diagnosis in 346 cases, the hospital stay was said to be over twelve days for more than half of the patients, and almost a third were hospitalized over twenty days.

In a series of 1,469 cases of pneumococcus

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944.

From the Vassar Brothers Hospital, Poughkeepsie, New York

CHART 1

Group	Number of Patients	Temperature	W B C	Average Hospital Days
T	34	103 1 average	13 000 average	15
A	29	103+	10 000+	9
A 1	16	103+	10 000+	18
Q	19	103+	10 000-	14
W	9	103-	10 000+	15
V	9	103-	10 000-	11
Total—all groups	140	101 8 average	7 900 average	22

pneumonia reported by Moore *et al.*,<sup>4</sup> most of them before chemotherapy was in use, the average hospital stay in uncomplicated cases was about fifteen days (14.8). Those with complications stayed an additional twenty-four days. Incidentally, they calculated \$127 per patient as the average additional cost, in hospital expense alone, for complications.

Comparing the small series of Dutchess County sulfonamide-treated cases of pneumococcus pneumonia with the large series of West Coast prechemotherapy cases, the hospital stay does not seem to be strikingly influenced by chemotherapy.

### Response to Drug (Sulfathiazole and Sulfadiazine)

In the hospital series the temperature curve, hospital stay, x-ray findings, discharge notes, etc., were studied in order to get an impression as to the response to the drug. As estimated by a roentgenologist in a swivel chair, the clinical response was good in 65 per cent of the patients and fair in about 30 per cent. Complications occurred in fewer than 10 patients, 2 patients died.

In reviewing and correlating the clinical and x-ray findings of the 116 cases with the hospital staff, it was noted that there was a temperature boost shortly after administering the drug in 35

per cent of 100 cases, followed by good response. It was pointed out by some of the staff that the variation in morning and afternoon temperature and other factors must be taken into consideration and that the boost should probably not be attributed to the drug.

### Complications

Two patients had serum, both with complications. One developed serum sickness and remained in the hospital seventy-seven days. The exact number with pleurisy is indefinite, but 2 had residual changes due to pleurisy. Complete suppression of the function of one kidney, caused by blockage of a ureter by sulfonamide crystals, was demonstrated in one patient.

### Resumé

X-ray films and charts of 138 pneumonia cases, including patients in all decades up to the ninth and all having had sulfonamide therapy, were reviewed.

Follow-up has been incomplete and no comparison has been made with a prechemotherapy series in the same institution, but the impression is that (1) there has been no noticeable speeding up of resolution and (2) there is no definite justification, as yet, for believing that the residual changes observed in this series are caused by the drug used rather than by other factors, such as the type of infection and the state of health of the particular lung parenchyma involved.

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### DR. WOLBERG CONDUCTING SEMINAR ON HYPNOSIS

The Association for the Advancement of Psychotherapy has announced that a seminar on "Hypnosis as an Adjunct to Psychotherapy" by Dr. Lewis R. Wolberg will be presented for ten Thursday evenings in the studio at 112 East 55th Street at 8:45 P.M.

The seminar began on October 5

and as instructor in psychiatry at the New York Medical College Flower and Fifth Avenue Hospital,

will cover a wide field of topics, including "Historical Aspects," "Phenomena of Hypnosis," "Suggestion," "Regression," "Crystal Gazing," "Play Therapy," "Dramatization," "Dream Induction," "Suggestion," "Persuasion," "The Manipulation of the Hypnotic Transference," "Detailed Hypnotic Treatment of a Case of Schizophrenia," "Detailed Hypnotic Treatment of Psychoneurosis," and miscellaneous cases.

# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the December 1 issue and will concern "Evaluation of Local Antisepsis."

### Management of Abdominal Distention

DR. C. H. WHEELER: The subject of our discussion today is the management of various types of abdominal distention. We mean to say something not only about paralytic ileus and other more severe forms of abdominal distention but also about the sort of abdominal distention which occurs as a medical problem in diseases such as typhoid fever and pneumonia.

Dr. Andrus is going to open the discussion.

DR. WILLIAM DEW. ANDRUS: Abdominal distention is a distressing accompaniment of many medical conditions and in the various degrees, from "gas pains" to extreme paralytic ileus, it requires constant attention in surgery. I shall discuss briefly the more recent concepts of the origin of this condition, since they have a distinct bearing on the therapy, and then go on to the prevention and treatment, from the standpoint of both the reinforcement of the normal mechanisms and the use of artificial means of relief.

In contrast to earlier conceptions of the origin of the distending gases from putrefaction in the bowel or, later, diffusion from the blood stream, recent experimental work and actual analysis of intestinal gases give strong support to the idea that by far the greater part, variously estimated at from 65 to 90 per cent, actually consists of swallowed air. This is indicated by the fact that the nitrogen content of gas from distended intestinal loops is so nearly that of air—70 to 80 per cent—while the same fact eliminates the blood stream as the source of nitrogen at least. As the distention increases to the point of venous stasis in the vessels of the mesentery, carbon dioxide passes into the lumen and comes to represent about 10 per cent of the retained gas. The remainder is made up largely of oxygen, hydrogen, and methane.

These facts, while not necessarily contra-indicating some of the older therapeutic methods, do serve to indicate why they are sometimes ineffectual and to point the way toward a more rational plan of prevention and treatment.

In surgical cases the mildest form of disten-

tion appears as the "gas pains" so often seen from two to five days after an abdominal operation. These can be greatly minimized by four measures: (1) operating on a nearly empty intestinal tract; (2) limiting the handling of the bowel to a minimum; (3) limiting the use of morphine and atropine; and (4) the use of enemata with or without smooth-muscle-contracting drugs such as pitressin or prostigmine. The milder cases often yield to a heat pad on the abdomen and a rectal tube.

One should interject at this point the observation that certain of the therapeutic measures collide with the more modern conceptions of pre- and postoperative care of cases requiring intestinal surgery and are therefore to be used with caution or at least with the understanding that some of their effects may require correction.

A wide variety of enemata are used, among which the soapsuds enema with a small amount of turpentine, the water and glycerine enema with or without magnesium sulfate, and the milk and molasses enema are perhaps the best known. Usually "gas pains" are merely annoying, but if they persist they should suggest the possibility of a more serious complication.

True ileus may, of course, be of two varieties—the true mechanical type with cramp-like pain, vomiting which is copious and often forceful, and audible borborygmi, and the paralytic, with pain not a marked feature and, if present, tending to be constant, vomiting of small quantities at frequent intervals, "overflow vomiting," and no audible borborygmi.

Paralytic ileus may occur in localized form, one of the most common of which is dilatation of the stomach. This condition makes its appearance often as hiccups which disappear promptly as the intragastric pressure is reduced. In its acute form dilatation of the stomach may be very serious and rapidly progressing, with severe circulatory symptoms supervening as the elevation of the diaphragm increases. Recognition of the condition is an immediate indication for passing a stomach tube, and this commonly

relieves the patient at once. This is one of the situations in which it is best to leave in a small-caliber stomach tube for several days to prevent recurrence.

Before operations on the stomach or upper intestinal tract it has become almost routine to pass such a tube, and after operation to apply mild suction as a means of preventing both the passage of swallowed air into the bowel and the accumulation of regurgitated intestinal content in the stomach. Indeed, as is so well demonstrated in the so-called Wangenstein suction, it is possible to decompress the upper intestine quite satisfactorily by this method. The amount of fluid drainage obtained represents the normally reabsorbed secretions of the stomach and sometimes of the upper intestine, a vital supply of base and chloride which must be replaced. To this end it is necessary to keep track of the amount of drainage obtained and to follow the blood chemistry. This represents perhaps the modern counterpart of the dehydration and demineralization which may be precipitated by the persistent use of drastic catharsis in both the pre- and post-operative care of surgical cases. True, getting the patient's bowels to move at a reasonable time after operation is important for his comfort, but for this violent catharsis is almost never required and in any event should not be repeated often. When one realizes the extent to which the most violent catharsis used to be used in surgery, some of the poor results seem more easily explained.

In the treatment of paralytic ileus coming on after other types of operation, such measures as heat applied to the abdomen, enemata, and, if indicated, oxytocic medication are usually employed before resorting to suction drainage of the stomach. These means of reinforcement of the natural processes usually accomplish the desired result, but in any patient with hiccups or vomiting the stomach tube is indicated and often relieves the complication in a spectacular fashion. The Miller-Abbott tube has proved a great boon in the handling of paralytic ileus and has practically displaced enterostomy in this condition. Getting it to pass into the duodenum may be troublesome at times, but this can usually be accomplished and the effects as the tube passes along into the bowel are most gratifying.

I mentioned earlier the signs differentiating paralytic from mechanical ileus because of the fact that certain measures, notably the employment of smooth-muscle-stimulating drugs, may be contraindicated in the latter. Indeed, it may be said that except in the later stages of mechanical ileus, when hyperactivity of the bowel above is replaced by atony, the body is providing all the propulsive force needed, and when atony super-

venes it is evident that the obstruction is complete. Even in early cases of mechanical ileus resort to intragastric suction is indicated and this may obviate the necessity of further measures in some cases. In persistent mechanical ileus, however, the only cure is release of the obstruction.

When patients with ileus are first seen a certain routine is advisable, including the passage of a small tube into the stomach, the giving of an enema, and, if not otherwise contraindicated, the starting of an infusion after taking blood for determinations of chlorides, nonprotein nitrogen, and carbon dioxide combining power. These measures establish a base-line against which further changes in the patient's condition can be gaged.

Perhaps the most stubborn cases of paralytic ileus encountered in surgery are those associated with retroperitoneal hemorrhage from fractures of the vertebrae or wounds. These may be very stubborn and require constant vigilance for control. Pitressin, prostigmine, and intubation may all be required.

In conclusion, let me stress the fact that the prevention of distention is most important and can be accomplished at times only by resorting to the passage of a small stomach tube and applying mild suction. More and more evidence is accumulating indicating that the source of much of the distending gas is swallowed air. Maintenance of adequate tone of the musculature of the bowel is also of importance.

DR WHEELER: I think that from the standpoint of medical diseases there is very little to add to what Dr. Andrus has said. The medical doctor encounters the abdominal distentions as a problem most frequently in the severe infections such as typhoid fever, pneumonia, and septicemia. As Dr. Andrus has pointed out, in medicine as in surgery it is usually easier to keep a patient with pneumonia or typhoid fever from getting distention than it is to reduce his distention after it has occurred. This, I think, is best accomplished with the use of frequent enemata and laxatives. There are numbers of remedies which are included in all descriptions of the treatment of abdominal distention in medical cases, such as the turpentine stupe and heat applied to the abdomen. Other practitioners apply ice bags to the abdomen, or give enemata with turpentine, etc., which are supposed to stimulate the colon to contract rather than merely to empty it, and use diets which are low in carbohydrates, or low in other things. It is my impression that none of these measures is particularly useful in a patient with typhoid fever who is markedly distended. It seems to me that the enema, the rectal tube, and a few



drugs, such as pitressin, usually given in a dose of 1 cc. hypodermically, or prostigmine methyl-sulfate in a dose of 0.5 mg., are the most effective measures. I should like to ask Dr. Gold what he thinks about the choice between pitressin and prostigmine in the management of abdominal distention.

In pneumonia we see beneficial results in abdominal distention from the administration of oxygen. It seems, frequently, that the tympanites which these patients develop may be related to anoxemia and the use of oxygen helps them.

I should like to ask Dr. Andrus whether he thinks the use of the Miller-Abbott tube or the Wangenstein suction is useful in cases of pneumonia and typhoid fever. To the best of my knowledge these technics are practically never used on the medical wards and I wonder if we are failing to use something which might be helpful.

DR. ANDRUS: I think one has to decide whether the discomfort, or even the hazard, so far as aspiration is concerned, of the continued presence of a small tube passed down through the nose and pharynx into the esophagus outweighs the possible comfort to the patient in the relief of some, at least, of his respiratory distress by the decompression of the upper portion of the intestinal tract. It is possible that it might be found useful, but I think those are the points which have to be considered.

I am glad that you mentioned the use of oxygen in distention, as I had omitted it from my consideration. In many cases the prolonged inhalation of high oxygen mixtures with the B.-L.B. mask, for example, does have a definitely beneficial effect on abdominal distention. There are certain theoretic considerations as to how it acts, which I don't think we need go into, but suffice it to say that it is a well-recognized method.

Probably the percentages which are obtainable with the ordinary oxygen tent would not be very effective, but with the B.L.B. mask the high concentrations obtainable are useful.

DR. HARRY GOLD: You mentioned the milk-and-molasses enema. Could you tell us how that is supposed to work?

DR. ANDRUS: I think perhaps that is one of the residua of older medical practice. I have no idea how it works but I can attest to the fact that it does work in startling fashion. Sometimes the nurses object to it because it is a bit messy, but it does work.

DR. GOLD: How much is administered?

DR. MORRISON: I think it is 100 cc. each of molasses and milk.

DR. GOLD: Is it fairly prompt in its action—within half an hour or many hours?

DR. ANDRUS: It is usually prompt. Do you have any comments on that?

DR. MORRISON: I have used it only two or three times, not more often chiefly because of the nurses' objections, but it does give very excellent results—I think a little better than the ordinary enemas.

DR. ANDRUS: It is less irritating.

DR. WALTER MODELL: I should like to ask about gas swallowing, either in eating or drinking. How can you tell the patient not to do it?

DR. ANDRUS: Something can be accomplished. When the prone patient is fed he is very apt to swallow air. If he can sit up and eat slowly, as he ordinarily would, he is less apt to swallow air.

DR. McKEEN CATTELL: I was wondering about the reasoning that since the composition of the gas in the intestine is similar to that of expired air it must have its source in swallowed air. It seems to me the constituents might well be in equilibrium with the gases of the blood just as is the case between the alveoli and the blood.

DR. ANDRUS: The nitrogen content of the blood is not so high as it is in the bowel. How can diffusion occur to the extent of 70 per cent of the content of the gas in the bowel from a percentage of circulating nitrogen such as exists in the blood?

DR. CATTELL: My question was based on the theoretic consideration that if the blood plasma is in equilibrium with the alveolar air, that the same relationship should hold between the blood plasma and any other gas in contact with the tissues. Nitrogen is, of course, less soluble than oxygen in the blood plasma, there being approximately twice as much oxygen at a given pressure. However, because of the higher partial pressure of nitrogen, plasma contains from three to four times as much nitrogen as it does oxygen. These considerations have been directly confirmed in several laboratories where it has been shown, for example, that the air released in the tissues following sudden decompression contains approximately 80 per cent nitrogen.

DR. ANDRUS: While the points mentioned by Dr. Cattell may be of significance, it is difficult for me to believe that this mechanism can explain any severe grade of distention for at least two reasons. First, the quantity of gas obtained by tube in some cases would seem to me to be far greater than could be dissolved in the amount of blood flowing through the intestines. More significant, however, is the fact that the mere presence of a patent tube in the stomach may prevent meteorism entirely. True, this is more easily accomplished with mild suction, but if one keeps the stomach empty the bowel beyond

will rarely become distended to any marked degree.

DR. WHEELER: I believe you have not answered the question which I posed with reference to whether there was any logical choice between pitressin and prostigmine?

DR. GOLD: I should say that the choice is more or less arbitrary. There are no criteria for making it. There are situations in which pitressin is effective when prostigmine is not, and vice versa. There is the fact that the mechanism of action of the two is different, one acting directly on the smooth muscle and the other indirectly through a cholinesterase inhibition. One might argue from pharmacologic and perhaps from some clinical evidence that prostigmine is the first choice, although if, after adequate doses, no improvement is obtained, one might then turn to a solution of pituitary or pitressin. By "adequate" I mean doses just short of those causing minor toxic symptoms. Prostigmine is the first choice by reason of the fact that it exerts relatively little action on the coronary circulation, while pituitary solution in large doses causes coronary constriction. This becomes a problem, especially in older people. Posterior pituitary materials in doses effective on the bowel may make patients deathly pale. They look wretched. Has that been your experience?

DR. ANDRUS: We have not used the posterior pituitary preparation as such. Pitressin does cause discomfort in patients and will induce pallor every now and then.

DR. GOLD: Small doses which rarely cause pallor are likely not to be dependable in their action on the bowel. When the dose causes a vigorous effect on the bowel, the patient often does not look well. However, looking pale is not a serious matter.

In the case of prostigmine, one can build up the amount in the body by repeating the dose of 0.5 mg. of the methylsulfate hypodermically every thirty minutes without obtaining much of a change in the appearance of the patient, although the patient may begin to feel pretty wretched. When the doses of prostigmine are large enough, the patient begins to vomit and may develop abdominal cramps, whereas with pituitary solution or pitressin vomiting is rather unusual.

Again, then, my first choice would be prostigmine, repeating the dose until abdominal distention begins to go, or there is some salivation, flushing, or nausea. If, at the point of these minor toxic effects, no appreciable beneficial effect on the bowel has taken place, one turns to pituitary preparations.

DR. WHEELER: How frequently could prostig-

mine be used with a patient who has been distended over a period of days? Is there some cumulative or other effect?

DR. GOLD: Prostigmine is not highly cumulative. The material is rapidly excreted. A good plan is to repeat the dose, at intervals of one-half to one hour, until there are signs of action. Then the interval is prolonged to two or three hours or more to maintain the action. If necessary, it may be continued for days without significant accumulation.

DR. CATTELL: Why do you talk about prostigmine instead of physostigmine? Is there any choice between the two?

DR. GOLD: Prostigmine solutions are more stable and prostigmine is a somewhat more potent compound than physostigmine, so that smaller doses are used in the case of the former. I don't believe that there is any significant qualitative difference between the action of prostigmine and of physostigmine or eserine. One may consider them quite interchangeable. Would you agree?

DR. CATTELL: Yes.

DR. WHEELER: Dr. Deitrick, I should like to ask you if you think the character of the diet is of any importance in the prevention of distention, or in the reduction of severe tympanites after it has occurred—for example, in a patient with lobar pneumonia.

DR. JOHN B. DEITRICK: When I am faced with a patient with abdominal distention, whether the food is digestible or not is the question which concerns me most. Ordinarily we say that these patients should not be given carbohydrate because of fermentation. In my opinion, this factor is rarely a matter of importance.

DR. WHEELER: It is not clear to me what digestion has to do with tympanites.

DR. DEITRICK: Impaired digestion is both a cause and an effect of tympanites. If foodstuffs are not properly digested, bacterial action will bring about distention. The distention in turn interferes with the admixture of intestinal juices with the food and leads to further impairment of digestion.

DR. WHEELER: It is interesting to note that all the authorities on typhoid fever agree that severe distention used to be a much worse problem in the days when the patients were starved or given a liquid diet than it was after the high caloric diet came into vogue.

DR. GOLD: I should like to ask about the use of vegetables. It is my observation that vegetables, especially those of the cabbage family, are particularly prone to cause troublesome distention. Does that agree with your experience?

DR. DEITRICK: I think that is true of foods containing much cellulose.

DR. WHEELER: Why should cellulose be a problem?

DR. DEITRICK: It takes longer to break it down and so there is more opportunity for bacterial action. Our intestines do not behave like those of a cow. A cow can digest cellulose, as do all the ruminants. We may break it down to some extent in the large bowel. Most of the cellulose is not digested and because it forms a coating it prevents the digestion of otherwise digestible material. Bacterial growth in the large bowel may break down cellulose and give rise to gas.

DR. GOLD: I should like to ask Dr. Andrus if he will say something about the use of the sulfa drugs in the control of distention. In abdominal surgery a good deal of use has been made of such drugs as sulfaguanidine and sulfasuxidine.

DR. ANDRUS: I can see reasons why sulfa drugs should reduce bacterial fermentation. The sulfa drugs might exert some effect on the lower bowel, particularly in cases of carcinoma of the rectum.

There is another aspect of the situation which I personally should like to hear discussed from the medical and pharmacologic standpoint, and that is the use of laxatives for the patient who has to be in bed for a considerable period of time.

In the patient with acute ileus we are rather shy of using laxatives. We feel that they are contraindicated except in some cases where the use of a mild laxative such as milk of magnesia in dilute form over a period of time may tend to clear up a situation in which it looks as if obstruction were impending.

DR. CATTELL: In connection with the use of laxatives, the distinction between a loss of physiologic function and mechanical obstruction must be important. What is the condition in acute ileus?

DR. ANDRUS: By paralytic ileus we mean that the *vis a tergo* is lost, but there is no mechanical obstruction of the bowel. In mechanical ileus we mean there is a mechanical obstruction of the bowel and, until the later stages, at least, the *vis a tergo* is not only not lost but is greater than ordinary. Does that clarify it?

DR. CATTELL: The differential diagnosis would be pretty important.

DR. ANDRUS: That is the reason I dwelt on the differential diagnosis of the two. In paralytic ileus we used to feel that the thing to do was to use violent cathartics and leave nothing in the stomach or upper bowel. The Miller-Abbott tube, by decompression, has solved that problem pretty well. I raise the question of the use of cathartics particularly in patients who have had a paralytic ileus and have been de-

compressed by the Miller-Abbott tube. It is a question of maintaining the tone of the bowel while a surgical patient is in bed, sometimes for long periods of time, and there are analogous cases in medicine.

DR. WHEELER: Dr. Gold, will you undertake to answer that question?

DR. GOLD: I hardly know how to start. As I see it, the question you put is whether a laxative should be used to maintain the tone, and which one. I should say, offhand, that the answer to the first would be yes, and the answer to the second that it doesn't matter.

DR. ANDRUS: Well, perhaps one should qualify that a bit. Our feeling is that there are any number of relatively mild laxatives which can be used, but that in surgery in general the feeling is to veer away from the violent laxatives, such as castor oil, for example. I am talking about a patient who for some reason or another has need for a laxative.

DR. GOLD: That would seem to make perfectly good sense, because no matter what the cathartic used, the more violent the stimulation the greater the tendency to subsequent depression of the gut. So mild cathartic action is what is wanted, but I also think the matter of the violence of cathartics is not related so much to the type of cathartic as to the amount, and that one can get almost the same results, both good and bad, that one gets out of castor oil from almost all other cathartics if one gives appropriate doses. It is, for the most part, simply a matter of dosage.

DR. ANDRUS: That is a good point.

DR. GOLD: I am wondering how often the use of a laxative, preoperatively and postoperatively or early in the course of the bed-rest period, contributes to the distention. In treating patients with coronary thrombosis, who lie quietly for a long period of time, we make it the rule to let them remain constipated as long as they can tolerate it, and we find that the patient can endure it longer than the doctor, because even on the fifth or sixth day the patient often still has a perfectly flat abdomen; no distention, and no discomfort. Having overcome the patient's psychologic barrier to the notion of going without a bowel movement for some days, the doctor begins to worry over whether things won't go badly if something isn't done to help move the bowels. However, it often happens that trouble begins after this is done. Rumbling, distention, and other bowel discomforts appear right after the bowels have been made to move.

I wonder whether better results in surgical cases are not in part due to the fact that there is a much



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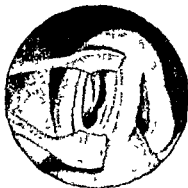
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[Continued from page 2368]

do not depress the activity of the bowel but rather increase it.

DR. ANDRUS: That is true in dogs, certainly.

DR. GOLD: It is so in the cat too, and there are x-ray studies in humans showing that the emptying time of the stomach is delayed but that once the barium gets past the stomach it seems to pass down the bowel very fast. Thus, the constipating action of morphine may not be due to diminished motility but to the fact that reflexes for defecation are suppressed.

DR. ANDRUS: I think part of the blame which has been heaped on morphine as a producer of postoperative distention has been due to the fact that as a medication preliminary to anesthesia it has been combined with atropine. This may be heterodox as far as Dr. Gold is concerned, since I heard him express his opinion with regard to this point before.

DR. GOLD: I think there is not much doubt that morphine or codeine alone causes constipation. It is a common effect of a cough medicine which contains these drugs. Patients often say the medicine relieved the cough but tied up the bowels, and in constipation the ground-work is laid for distention. While I believe that ordinary doses of atropine have little influence on the bowel, they are effective in counteracting the parasympathetic action of morphine on the bowel. Atropine might contribute to constipation, although I am not clear on how it would do it.

DR. WHEELER: How about some question from the Army or Navy?

STUDENT: I should like to ask Dr. Deitrick whether he thinks it is a good idea to substitute simple carbohydrates, such as glucose, in the diet of patients with typhoid fever, as is done in pancreatic insufficiency.

DR. DEITRICK: I think we usually do in the pneumonia patients. We put them on a liquid diet which is composed mostly of carbohydrates and fruit juices. Then we give them plain broth which does not contain much protein and only a little fat. The carbohydrates which they get are in simple form. They are not given any whole wheat or things of that type.

I should like to ask Dr. McLean about postoperative distention in connection with operations on the eye. Isn't that a pretty serious problem?

DR. McLEAN: It is much less a problem than it was, say, five years ago. For many years it was customary in cataract operations, for example, to put the patients flat on their backs in bed and give them liquids through a tube. They were bothered with mild or moderate distention, or occasionally severe, true paralytic ileus. During the last few years we have revised our sur-

gical technics considerably. We get patients up into chairs, or at least have them sit up and move around in bed. We give them a more liberal diet and distention as a major problem has practically vanished.

DR. DEITRICK: I know those patients were formerly put to bed flat on their backs for a week or ten days and they were not allowed to move an arm or leg.

DR. McLEAN: And they would blow up pretty routinely.

### Summary

DR. GOLD: The subject of abdominal distention was under consideration in the conference today. While there was no attempt to explore it exhaustively, many points of interest have been brought up as they apply particularly to the patient who is ill in bed.

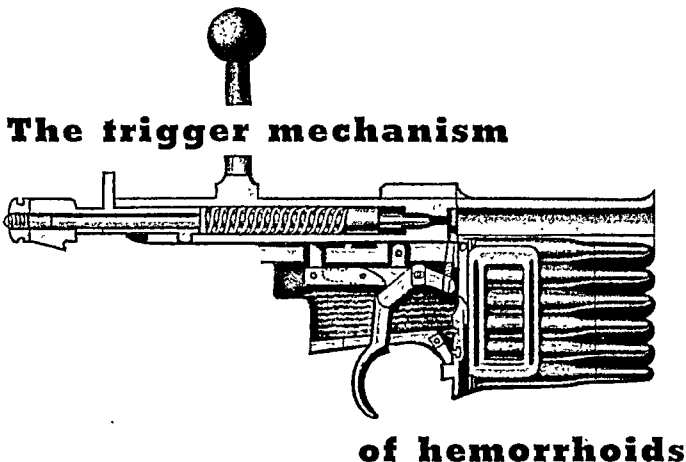
*Both the surgeon and the internist have a stake in the problem of abdominal distention. It complicates the postoperative state and gives rise to difficulties in the medical patient, especially the case of systemic infection.*

There seems to be no doubt of the fact that gastro-intestinal motility is disturbed. It may vary from a case of diminished tone with intestinal unrest causing mild "gas pains," through various intermediary stages to complete paralysis in the form of paralytic or mechanical ileus. An important distinction is drawn between the latter two, for cramp-like pain and audible borborygmi are outstanding only in the mechanical type of ileus, which requires prompt removal of the mechanical obstruction.

There are gaps in our knowledge as to how the condition is brought about and where the gas comes from which distends the bowel. Whether the trigger lies in a disorder of the nervous mechanism, direct action on the musculature, or vascular changes in the gut is not established. Whether the gas comes first and brings about secondary changes in the bowel, or whether the changes in the bowel bring about the accumulation of gas in a vicious cycle also remains to be established. The discussion brought out a sharp difference of view regarding the source of the gas. Speaker One argued, from the composition of the gas, which is very high in nitrogen, and from the amount of the gas, that it is mostly swallowed. Another argued, from the law of partial gas pressures on the sides of permeable membranes, that such composition might be expected even if the gas were not swallowed but passed out of the blood into the bowel.

Factors known to predispose to abdominal distention in surgical cases are operation with the bowel insufficiently emptied and excessive

[Continued on page 2372]



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[Continued from page 2370]

manipulation of the bowel. The kind of anesthetic may play a role. In medical cases infection promotes distention, not only infection involving the intestinal tract directly as in the case of typhoid, but in systemic infections such as pneumonia in which distention is particularly troublesome.

Diet, drugs, posture, and the enema came in for some discussion concerning their part in producing or controlling abdominal distention. The importance of dietary restrictions to prevent and relieve distention is unquestioned, but there is not the same agreement as to the nature of the restrictions. Feeding seems less likely to give rise to distention than starving. That was the experience in the early studies on typhoid fever. Emphasis is placed on the advantage of readily assimilable food (sugar, juices, broths). Vegetables containing abundant cellulose seem to be objectionable because little or none of the cellulose is digested and breakdown by bacterial action may give rise to more gas. Its irritant effects may also cause distress.

There was the question whether oversolicitude about a daily bowel movement may not do more harm than good. There was one view that patients ill in bed frequently show little abdominal distention or distress if inactivity of the bowel is permitted for several days, and that often gas, rumbling, and distention become troublesome only after the bowels have been stirred to action.

It was urged to withhold measures to activate the bowel for four or five days, provided there was not discomfort. To this there was a contrary opinion.

There was general agreement that vigorous catharsis with castor oil or other agents pre- or postoperatively is a potent cause of abdominal distention. The choice of the cathartic seems to be of less importance than the dose, for a

strong cathartic action, no matter what the agent, produces secondary depression in the motility of the gut, the ground work for abdominal distention. There was the suggestion that the enema disturbs the physiology of the bowel less than cathartics and that it might be preferable to cathartics as a means of preventing as well as relieving abdominal distention.

Morphine promotes constipation and abdominal distention and there was the opinion that atropine, often given with morphine, may contribute to it.

The surgeon combats distention successfully by a tube passed into the stomach, and there has been great progress in relieving distention lower down in the intestine by the use of the Miller-Abbott tube and Wangenstein suction. The suggestion was made that this measure might be more often applied in medical cases.

In the way of drugs to increase the tone of the bowel prostigmine methylsulfate in 0.5 mg. doses hypodermically, repeated every hour or so until minor toxic effects appear, if necessary, seems to be the first choice. If this is not effective, solution of posterior pituitary or pitressin in 1 cc. doses by hypodermic injection may be tried. The difference in their mechanism of action and toxic effects was discussed.

In paralytic ileus it is the practice to employ heat applied to the abdomen, the milk and molasses enema, and pitressin or prostigmine before resorting to suction drainage.

The view was expressed that letting the patient sit up for his meals, if possible, is more likely to prevent distention, on the grounds that it leads to less swallowing of air.

Prevention is paramount in the management of abdominal distention. Early treatment is imperative, since it becomes increasingly difficult to control as the condition advances, and fully developed paralytic ileus often leads to disaster.

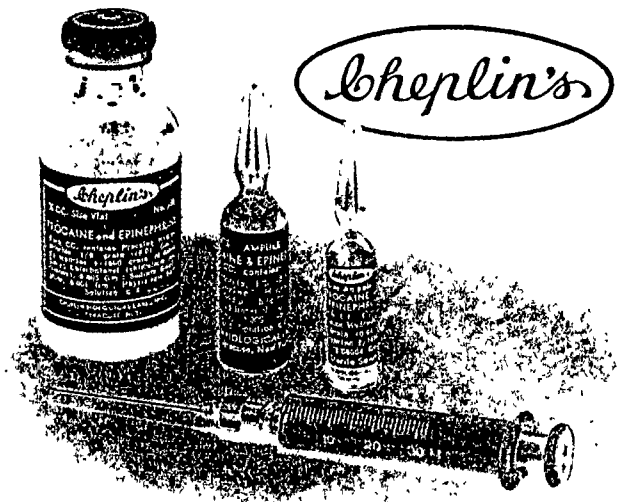
#### DIPHTHERIA-TETANUS TOXOID, PRECIPITATED

Within recent years, tetanus toxoid has taken its place with diphtheria toxoid and other effective prophylactic agents. Diphtheria-tetanus toxoid, combining the advantages of both preparations in a volume dose approximating that of either and inducing no more reactions, marks a still further advance.

A limited supply of precipitated diphtheria-tetanus toxoid prepared by the Division of Laboratories and Research is now available on application to the central laboratory. It is expected that this toxoid will be ready for general distribution as soon as the demand for it and the extent to which it will be substituted for precipitated diphtheria toxoid can be determined. The toxoid is dispensed in 2.5 and 10 ml. volumes. Directions for its use and the precautions to be observed are the same as for the

precipitated diphtheria toxoid except that two doses of 1 ml. each, a month apart, are required.

As after diphtheria toxoid, the intracutaneous test (Schick) can be used to determine whether immunity to diphtheria has been acquired. There is no similar test for tetanus; hence, in order to maintain an adequate level of immunity against tetanus, a stimulating dose of precipitated diphtheria-tetanus toxoid or of tetanus toxoid alone should be administered at the end of a year. A stimulating dose of tetanus toxoid at the time of any injury for which ordinarily a prophylactic injection of antitoxin would be given, is considered to be sufficient to protect against tetanus infection. *In case of any doubt as to previous active immunization with tetanus toxoid, a prophylactic dose of tetanus antitoxin should be administered.*—*Health News, Sept. 11, 1944*



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# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman (428 Greenwood Place, Syracuse); George Baehr, M.D., and Charles D. Post, M.D.*

## Transmission of Disease

THE medical staff of Memorial Hospital of Greene County and the Greene County Medical Society met on October 26 at 9:00 p.m. at Memorial Hospital of Greene County, Catskill, for postgraduate instruction.

The lecture was "Transmission of Disease by Lice, Fleas, Ticks, and Other Insects." Dr. Morton C.

Kahn, Ph.D., associate professor of public health and preventive medicine, of the department of public health and preventive medicine of Cornell University Medical College, New York City, was the speaker.

This instruction was presented as a cooperative endeavor between the Medical Society of the State of New York and the State Department of Health.

## General Medicine

INSTRUCTION in general medicine was given to the Madison County Medical Society on October 26 at 8:00 p.m. at the Hotel Oneida in Oneida.

The first lecture was "Traumatic Surgery with Emphasis on the Treatment of Wounds and Shock," by Dr. Emmett A. Dooley, assistant clinical professor of surgery at New York Post-Graduate Medical School, Columbia University.

This was followed by "The Therapy of Thyroid Disorders, Including Thiouracil," given by Dr. Ivan Hekimian, assistant professor of medicine at the University of Buffalo School of Medicine, Buffalo, New York.

The first lecture was provided by the Medical Society of the State of New York with the cooperation of the New York State Department of Health.

## Instruction in Obstetrics

INSTRUCTION in obstetrics was given by Dr. Harvey B. Matthews, clinical professor of obstetrics and gynecology, Long Island College of Medicine, Brooklyn, when he spoke on "Forceps Delivery—Indications, Dangers, and Accomplishment" at a meeting of the Saranac Lake Medical Society held

October 11 at 8:00 p.m. in the John Black Room, Saranac Laboratory, Saranac Lake, under the auspices of the Council Committee on Public Health and Education of the Medical Society of the State of New York in cooperation with the New York State Department of Health.

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## SIXTH WAR LOAN DRIVE STARTS NOVEMBER 20

All company War Bond chairmen for the Sixth War Loan will be officially designated as members of the War Finance Committee for New York under a new plan adopted by the committee's Payroll Savings Division.

The plan, providing a close link between company bond leaders and the War Finance Committee, is expected to facilitate the internal promotion of the War Loan drive in each company and in turn to stimulate a greater sale of extra bonds during the drive, scheduled to begin November 20.

The presidents of more than 10,000 business organizations in New York City already have begun the selection of their company chairmen, according to Frank B. Mitchell, senior deputy manager of the Payroll Savings Division, who is supervising the program.

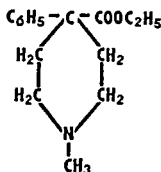
When all of the appointments are completed, the enrolled Treasury Representatives will receive identification as War Finance Committee members.

The new plan is expected to speed up the distribution of Sixth War Loan supplies and material, Mr. Frank Mitchell said, enabling the companies to get off to a flying start in the drive early in November. Since purchases of Series E, F, and G bonds made during November count toward the Sixth War Loan goal, utilization of the plan will permit the company chairmen to start selling bonds and securing pledges before the actual opening day of the drive, on November 20. It will also mean that employees who purchase their extra bonds on the payroll deduction or cash installment basis will be able to spread their payments over a longer period, thus making it easier for them.

Mr. Mitchell said that the centralization of all War Loan activities in one person who is actually linked with the War Finance Committee will result in a mutual saving of time and effort for both the Payroll Savings Division and the 10,000 companies operating under the new plan.

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# Medical News

## New York Veterans Lack Psychiatric Care, Report Shows

THE New York City Committee on Mental Hygiene of the State Charities Aid Association made public on September 21 a summary of a report of an extensive study of 623 men who had been rejected for or discharged from the armed forces for neuropsychiatric reasons (nervous and mental handicaps or disabilities).

The purpose of making the study was to determine the kinds and extent of care and help needed for their rehabilitation, and the facilities available to meet such needs.

The study, based on an investigation of a typical sample of 314 rejected and 309 discharged men, revealed that only a small percentage of them are receiving needed psychiatric care, and that community facilities for such care are wholly inadequate to the needs.

The outstanding finding of the report was that among the 623 men studied, 492, or about 80 per cent, were found to need some form of psychiatric help.

However, only about 25 men (5 per cent) were getting it. One factor in the problem is that the majority of the men are neither aware of their need of psychiatric help nor recognize its value. Of the 492 men needing such help, only 123, or 25 per cent, understood their need of it. The lack of facilities to provide such help is reflected in the fact that of 123 men who knew that they needed psychiatric help and wished to have it, 17.5 per cent, or only about 25 men, were actually receiving it.

These percentages, when applied to the entire group of estimated neuropsychiatric rejectees and discharges for New York City (135,500), indicate that of these 103,000 need some sort of psychiatric help; that 27,000 want help, and of these only about 5,400 are receiving it, though they are eager for it and need it badly.

Of the 314 rejected men studied, 257 needed psychiatric help; 151 needed organic medical and surgical treatment; 139, vocational counsel and assistance; 46, neurologic; 24, family case work; 15, group or recreational; and 15, educational. Some of the men required more than one kind of treatment or help.

The investigation of 309 discharged men showed 235 needing psychiatric help, 184 medical and surgical treatment, 166 vocational, 24 neurologic, 31 family case work, 10 group or recreational, and 46 educational.

The group studied were New York City residents and the implications of the survey were stated in terms of estimated present and prospective rehabilitation needs in this city. The survey is considered to have national as well as local significance, and the report has been submitted to the War and Navy Departments, the U.S. Public Health Service, National Selective Service, Veterans' Administration, the Department of State, the Federal Security Agency, the American Red Cross, and various other officials, agencies, and individuals concerned with this problem.

The study was made under a grant to the New York City Committee from the Commonwealth Fund and was carried out under the direction of a Subcommittee on Psychiatric Needs in Rehabilitation,

comprising Dr. Lawrence S. Kubie, Chairman; Ethel L. Ginsburg, Assistant Director, Veterans' Service Center; Dr. Marion E. Kenworthy, New York School of Social Work; Samuel J. Kopetzky, Col., (MC), Medical Director, New York City Division, Selective Service; Marian McBee, Executive Secretary, New York City Committee on Mental Hygiene; Dr. Robert B. McGraw, Chief of Clinic, Department of Psychiatry, Vanderbilt Clinic; Harry N. Rivlin, Ph.D., Associate Professor of Education, Queens College; and Alice J. Weber, Regional Representative, Bureau of Public Assistance, Social Security Board.

Dr. Sol W. Ginsburg was medical director of the study and wrote the report. The investigation was carried out by a staff under his direction, comprising Louisa Blaine and Raymond Franzen, Ph.D., research consultants; Clara Rabinowitz and Rae L. Weisman, psychiatric social workers, and Ruth Valentine, Ph.D., psychologist.

The report disclosed that from October, 1940, through June, 1944, in New York City alone, 291,704 men were rejected for service in the armed forces for all causes. Of these, 87,500 were rejected on neuropsychiatric grounds, or about 30 per cent.

According to Army figures which have released, the report stated, of the one and a half million men who have already been discharged from the Army the approximate percentage of discharges on neuropsychiatric grounds would be 40 to 45 per cent of the total discharged. New York City contributes about 8 per cent of the armed forces, and the neuropsychiatric discharges from New York City total about 48,000 and both the discharges and rejectees about 135,500.

The magnitude of the problem presented by men rejected for service in the armed forces because of neuropsychiatric disabilities and by those discharged for such reasons is now well recognized by those close to the problems, the report stated, but it is far from being understood by the general public. It is a conservative estimate that up to July, 1944, there have been 135,500 such neuropsychiatric discharges and rejectees in New York City.

Little has been known as to exactly what this group of men need in the way of special psychiatric and other services, as to what civilian facilities are or can be made available to satisfy this demand, and as to what new services or enlarged services are needed. This study was made to attempt to answer these and related questions. The investigation was made possible through the courtesies extended by Col. Samuel J. Kopetzky.

The need, the report states, is in sharp contrast to the situation with respect to the available resources for the common types of medical and surgical treatments.

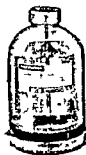
Of the veterans who want help (75 per cent of the rejectees and 74 per cent of the discharges) between 80 and 90 per cent are receiving the forms of medical and surgical aid they require as against only 17.5 per cent of the neuropsychiatric cases who are getting the treatment they need. Nothing could make clearer than this the inadequacy of existing facilities for psychiatric treatment in the community, the report stated.

(Continued on page 2378)

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[Continued from page 2376]

## Harvard Medical School Opened to Women

**H**ARVARD University on September 25 opened the doors of its Medical School to women for the first time since the school was founded 162 years ago. Closing a long fight, the board of overseers of Harvard College approved a recommendation of the faculty of the Medical School that women be eligible for admission. The recommendation was approved two months ago by the Harvard Corporation and will become effective in the fall of 1945.

The Medical School was one of the few major medical schools to exclude women.

Harvard has for several years been admitting women to several of its other graduate schools.

The question of admitting women to the Medical School had been discussed since 1847, but the war brought the issue into a new light as the need to replace physicians going into the armed forces became apparent.

The medical school faculty voted last year to admit women, but the recommendation was turned down by a six-to-one vote of the Harvard Corporation. The faculty renewed its proposal early this year.

During the last war a proposal was made that women students of Radcliffe College be permitted to study medicine at Harvard, but nothing came of it.

In 1872 the faculty turned against a proposal by Dr. Marie Elizabeth Zakezewska, founder of the New England Female Medical College, that Harvard take over that school.

A survey of fifteen leading medical colleges in seven cities, recently reported in the *New York Times*, showed only a slight increase in enrollment of women at nine schools. The other six report enrollment at the level of previous years.

## Medical Prize Awarded

**T**HE Institute of the Aeronautical Sciences recently announced award of the annual John Jeffries prize for contributions to aeronautic medical research to Sir Harold E. Whittingham, Director General of the medical services of the Royal Air Force.

Since his graduation from Glasgow and service in Iraq and India in the last war, Sir Harold has

been the initiator and organizer of medical research for the RAF.

The award was made by a committee consisting of the Director of Research, National Advisory Committee for Aeronautics, and the presidents of the National Aeronautic Association, the Air Transport Association, the Aero Medical Association, the Institute, and the Aeronautical Archives.

## Admiral Butler Dies

**R**EAR ADMIRAL CHARLES ST. JOHN BUTLER, U.S.N., retired, authority on tropical medicine and seasickness, died at his home in Bristol, Tennessee, on October 7.

Born in Bristol in 1875, Admiral Butler entered the Navy medical service in 1900. He was the author of a number of scientific papers and spoke before many medical gatherings. His last assignment before he retired in 1939 was that of chief administrative officer for the United States Naval Hospital in Brooklyn.

Admiral Butler, who received his M.D. from the University of Virginia in 1897, was commanding officer of the Naval Medical School, Washington, D.C., from 1921 to 1924, and again from 1927 to 1932; of the United States Naval Hospital, Brooklyn, 1932-1935; of the Naval Medical Supply Depot, Brooklyn, 1935-1936; of the Naval Medical Center, Washington, D.C., 1936-1938.

In 1935 Admiral Butler was president of the New York Society of Tropical Medicine, and in 1940-1941 of the American Academy of Tropical Medicine.

## Typhus Commission Medal Awarded to Five

**T**HE United States of America Typhus Commission Medal has been awarded by order of the President to Dr. Abdel Wahed El Wakil, Egyptian Minister of Health, and to three British Brigadiers of the Royal Army Medical Corps for the help they have given representatives of the Commission in investigating typhus fever in the Middle East and southern Italy. The members of the Royal Army Medical Corps are Brigadiers John S. K. Boyd, George B. Parkinson, and Rudolf W. Galloway.

Dr. Wakil was cited for his close cooperation with the Commission at Cairo which resulted in benefit

to the military forces; Brigadier Boyd's citation was for his cooperation in arranging for the distribution of typhus vaccine through the Middle East; and Brigadier Parkinson and Brigadier Galloway were cited for their help in preventing the spread of typhus in southern Italy.

Brig. Gen. Leon A. Fox, USA, was also awarded the medal, for his service as director and field director of the United States of America Typhus Commission, which brought the epidemic in Southern Italy under control within a month.—*Release from the Office of the Surgeon General, Sept. 15, 1944*

## County News

### Albany County

Dr. John E. Heslin, of Albany, was chosen president-elect of the Western New York and Ontario Urological Society at the meeting of that organization held in Buffalo in September.

### Chautauqua County

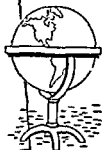
Dr. Percy S. Pelouze, of Philadelphia, addressed

the fall meeting of the county society on September 20 at the Newton Memorial Hospital, Cassadaga.

Dr. Pelouze, formerly assistant professor of urology at the University of Pennsylvania and consulting urologist at the Delaware County Hospital, is at the present time serving as special consultant for the

[Continued on page 2380]

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\**Laryngoscope*, Feb. 1935, 1 ol. XLV, No. 2, 149-151. *Laryngoscope*, Jan. 1937, Vol. XLVII, No. 1, 58-60. *Proc. Soc. Exp. Biol. and Med.*, 1934, 32, 241. *N. Y. State Journ. Med.*, Vol. 35, 6-1-35, No. 11, 590-592.

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[Continued from page 2378]

U.S. Public Health Service and for the past two years has devoted a major portion of his time to lectures and consultations at military hospitals and the U.S.P.H.S. Rapid Treatment Center.

Dr. Pelouze is the author of many scientific articles, as well as several books, two of which are *Gonorrhea in the Male and Female*, and *Office Urology*.

During the next two months, he will speak before a number of county medical societies in New York State. He addressed the annual meeting of the Eighth District Branch of the New York State Medical Society.

He is now a member of the boards of directors for the American Social Hygiene Association and the American Neisserian Medical Society.

Also appearing on the county association's program was Miss Ruth G. Hall, of Albany, member of the State Committee for the Procurement and Assignment of Nurses, who discussed the functions of the committee in connection with recruitment of nurses for the armed forces and for work in civilian hospitals in critical areas.

The session began with dinner at 1:00 P.M.\*

#### Dutchess County

A regular meeting of the county society was held in the new pavilion of the Hudson River State Hospital, Poughkeepsie, Wednesday, October 11, at 8:00 P.M.

The scientific session was "Present Day Advances and Treatment of Venereal Diseases," by Dr. P. S. Pelouze, of the Pennsylvania Medical Society and author of several books on venereal disease.

#### Erie County

The new secretary-treasurer of the Western New York and Ontario Urological Society is Dr. George E. Slotkin, of Buffalo, who was elected at the Society's meeting held in Buffalo on September 15.

#### Franklin County

Tribute was paid to the memory of the late Dr. Edward Livingston Trudeau, first president of the Saranac Lake Society for Control of Tuberculosis, at the fortieth anniversary celebration of the National Tuberculosis Association held the week of September 15.

The local society, organized in 1907, was the first of the smaller groups founded. It will publish its thirty-eighth annual report next January.

Dr. Edward R. Baldwin occupied the chair at the organization's first meeting and has since served as a member of the executive board of the Society.

Dr. John N. Hayes is now president and Dr. Francis B. Trudeau is vice-president. Dr. Daniel M. Brumfield is a member of the executive committee.

Dr. Hugh M. Kinghorn is chairman of the district nursing committee and Dr. Baldwin of the ways and means committee.

A regional Christmas Seal conference of representatives from five northern counties was held in connection with the celebration. Attending were state and local workers, executive secretaries, and board members from Franklin, Essex, Clinton, St. Lawrence, and Hamilton counties.

Mrs. Marie Warner Anderson, seal-sale campaign director of New York State, and George J. Nelbach, executive secretary of the State Charities Aid Association, were in charge of the conference.\*

#### Kings County

A special mass meeting of the Physicians Guild of Kings County was held October 10 at 9:00 P.M. at the Biltmore in Brooklyn. The program consisted of four lectures: "The Functions and Operations of the Medical Practice Committee—New Compensation Laws," by Dr. Francis M. Conway, chairman of the Medical Practice Committee; "Relationship of the Labor Department to the Physician," by A. Goodman, Deputy Commissioner of Labor; "A Comprehensive Analysis of the Pending Federal Health Insurance Legislation," by Louis H. Solomon; and "United Medical Service," by Dr. Frederick E. Elliott.

The physicians of Kings County and their wives were invited to the meeting.

. . .

The first meeting of the executive committee of the Pediatric Section of the Medical Society of the County of Kings for the current year was held on October 9, at the home of Dr. A. M. Litvak.

Several scientific sessions have been planned for this year, the first of which was held on October 23, at 8:30 P.M. at the Kings County Medical Society. Dr. James E. Perkins of the New York State Health Department spoke on "Epidemiology of Poliomyelitis," and Dr. William B. Snow, of Manhattan, discussed "Therapy in the Acute and Convalescent Stages of Poliomyelitis." The medical profession has been cordially invited to this and all subsequent sessions.

The officers for the current year are Dr. Abraham M. Litvak, president; Dr. Henry Rascoff, vice-president; Dr. Harold Levy, secretary; and Dr. Samuel K. Levy, treasurer.

. . .

A new ceremony was added to the eighty-sixth commencement exercises of the Long Island College of Medicine at the Brooklyn Academy of Music on September 28 with the presentation of the first Alumni Medal for Distinguished Service to American Medicine to Dr. Robert L. Dickinson, world-known gynecologist, who graduated from the college in the class of 1882.

Dr. Frank L. Babbott, chairman of the Board of Trustees and former president of the college, made the presentation of this first award, which is a medallion bearing the head of Hygieia, goddess of health. This alumni-achievement medallion, Dr. Babbott said, has been established to honor graduates of the college who have made notable contributions to American medicine.

Dr. Dickinson has distinguished himself as a leader in gynecology, obstetrics, in teaching, and in research and in medical arts. He is interested in problems of human health to which problems he has made many contributions. At the present time Dr. Dickinson is in charge of a studio of medical art at the New York Academy of Medicine. Dr. Dickinson's achievements in research, in medical arts, and in teaching represent a distinguished career of sixty-two years. He still is actively at work on creative endeavors.

Models have been made for medallions bearing the heads of Hippocrates and Aesculapius, which will be used for subsequent recipients of the award. The college will retain a replica of each award as it is made, for display in the main administration building.

\* Asterisk indicates that item is from a local newspaper.

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**F. R. SQUIBB & SONS NEW YORK**

[Continued from page 2380]

### New York County

Dr. Oswald T. Avery, member of the staff of the Rockefeller Institute for Medical Research, received the New York Academy of Medicine Gold Medal on October 5 for his discoveries made during thirty years of research on the pneumococcus or pneumonia germ. Dr. Arthur Freeborn Chace, president of the Academy, presented the medal to Dr. Avery at a brief ceremony in the auditorium of the Academy building.

This year Dr. Avery has studied the transformation of one type of pneumococcus into another, and has "isolated the 'transforming principle' as a thymonucleic acid," a discovery which, according to the citation, "has very far-reaching implications for the general science of biology."

Since 1930 the Academy has awarded six gold medals for distinguished service to medicine. The last presentation was made in 1938 to Dr. Béla Schick, discoverer of the Schick test for diphtheria and the toxin-antitoxin serum for diphtheria prevention.\*

. . .

Robert E. Dineen, State Superintendent of Insurance, and the New York Board of Social Welfare announced on September 21 their joint approval of a certificate of incorporation for the Health Insurance Plan of Greater New York, approval required under the Membership Corporations Law.

. . .

The stated monthly meeting of the county society was held on October 23 at 8:15 p.m. at the New York Academy of Medicine. The executive session was followed at 9:00 p.m. by a scientific session, consisting of four lectures: "Relationship of the Practicing Physician to Industry," by Frederick H. Shillito, chairman of the special committee on industrial medicine of the county society; "Federal-State Rehabilitation Program for Disabled Civilians," by Dr. Dean Clark, Senior Surgeon (R), U.S.P.H.S., Chief Medical Officer, Office of Vocational Rehabilitation, Washington, D.C.; "What Industry Expects of the Doctor," by Dr. Victor C. Heiser, medical director, National Association of Manufacturers; and "Psychiatry in Industry," by Dr. Charles C. Burlingame, psychiatrist-in-chief of the Institute of Living, and chairman of the subcommittee on psychiatry of the National Association of Manufacturers.

### Oneida County

Dr. Esther L. Moeller, who was the only woman in the class of 1942 at Albany Medical College, has returned to New Hartford, her home, to practice general medicine.

Her husband, Dr. A. DeWitt Brown, established an office in New Hartford last December.

Dr. Moeller received her premedical education at Barnard College, Columbia University, and after her graduation from medical college she served a year's internship in Memorial Hospital, Albany.

For the last year, she had been assistant resident in pathology and bacteriology in the Albany Hospital. She is a diplomate of the National Board of Medical Examiners.

Dr. Moeller and Dr. Brown were married December 29, 1942, a few months before they received their degrees together from the Albany Medical College.

### Ontario County

The fourth quarterly meeting of the county society was held at the Canandaigua Country Club, Canandaigua, on October 10. The business session was followed by dinner at 6:30 p.m. and a scientific session at 7:30 p.m.

Dr. Percy S. Pelouze, formerly of the department of urology of the University of Pennsylvania and now of the U.S. Public Health Service, spoke on "Gonorrhea—A New Control Program."

### Queens County

Dr. Robert M. Robbins, of Flushing, formerly Walton-Okaloosa County Health Officer in De Funiak Springs, Florida, is now assistant commissioner of Health in the Department of Health, Macon, Georgia.

### Rensselaer County

Dr. H. Jackson Davis, Chief Medical Officer of the State Department of Social Welfare, has been granted military leave from the department to accept a commission as major in the newly established Civil Public Health Division, U.S. Army Medical Corps.

Major Davis, who has been in State public health and social welfare services since 1930, left for Charlottesville, Virginia, on September 14 to begin his Army duties. The Civil Public Health Division will develop public health policies and practices in liberated and occupied countries in all war theaters, establish supervisory and liaison relations with local public health officials, and provide certain essential medical supplies in those areas.

Major Davis is a veteran of World War I, and holds liberal arts, medical, hygiene, and public health degrees from Stanford, Harvard, Yale, and Johns Hopkins Universities, respectively. Before joining the State Department of Social Welfare, he served in several administrative posts in the State Department of Health.

Major Davis is married and has two children. His home is in Nassau.

### Rockland County

Dr. Gerrit F. Blauvelt, Nyack, former president of the Rockland County Medical Society, observed his ninety-fifth birthday on August 1. Dr. Blauvelt is the sole surviving incorporator of the Nyack Hospital.

### St. Lawrence County

Dr. S. Pope Brown observed his fiftieth year as a doctor in Potsdam in June. He was graduated from the University of Pennsylvania, and started practicing medicine in Potsdam following graduation.

Dr. Brown served for twenty-three months during World War I, when he received a commission as first lieutenant. During his service he was raised to lieutenant colonel and spent thirteen months in France.

For the past sixteen years, Dr. Brown has served as St. Lawrence County coroner. He is a member of the Potsdam Hospital physicians' staff, the St. Lawrence County Medical Society, the State Medical Society, and the American Medical Association.\*

### Schuyler County

Dr. Raymond D. Fear, of Ithaca, district state health officer, discussed the poliomyelitis epidemic at

[Continued on page 2384]



## The Great Incapacitator

The common cold is responsible for more disability and loss of working time than any other disease

Therefore much has been written in the medical literature—both pro and con—concerning the value of oral catarrhal vaccines in prevent

ing colds and the complications that follow

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[Continued from page 2382]

the luncheon of the Watkins-Montour Rotary Club at the Jefferson Hotel on September 15.

Dr. Fear said that in Schuyler County only 22 cases had been reported and that there were no serious cases and no deaths.

Dr. Fear was introduced by School Superintendent Irving D. Goodrich.\*

### Tioga County

Fifty years ago, on September 28, one of Owego's young men received his diploma for the practice of medicine in what is now known as the New York Medical College, Flower and Fifth Avenue Hospitals, in New York City.

Today that man, Dr. Louis D. Hyde, is still engaged in a branch of the medical profession in Owego. On September 27 Dr. Hyde participated in the commencement exercises at the hospital and received a gold diploma in honor of his anniversary.

Dr. Hyde has lived in Owego nearly all his life. He was graduated from the Owego Free Academy in 1888. He was valedictorian of his class in medical college and served an internship at the Middletown State Hospital. Dr. Hyde also served as a member of the staff of Glen Mary Sanitarium for six years.

Following his graduation in medicine, Dr. Hyde attended the College of New York Ophthalmic Hospital, where he was graduated in 1902. He later served as resident surgeon at this institution.

In 1903 Dr. Hyde returned to Owego and began his practice, which he is still carrying on.

Dr. Hyde served a term as president of the Tioga County Medical Society.

Two members of Dr. Hyde's class also practiced in the Village of Owego. Dr. A. W. Stoutenburg opened an office in the village and later died in Binghamton. Dr. Henry Merriam, who also practiced in Owego, now resides in Ithaca.\*

. . .

The Tioga county society held its fall meeting on Wednesday, October 4, at Seneca Lake. Dr. John B. Schamel was chairman of arrangements. Dr. Corbet Johnson, of Spencer, assisted Dr. Schamel with plans for the meeting.

Dr. Hiram Knapp, Jr., of Newark Valley, president of the society, conducted the business session.

Dr. Frederick Carpenter, of Waverly, dean of Waverly physicians, was the honor guest.

A number of Owego physicians attended the meeting.\*

### Washington County

The annual meeting of the county society was held on October 10 at 4:00 p.m. at the Court House in Hudson Falls. Following dinner at the Hotel Carlton at 6:30 p.m., a scientific program was given. Dr. Charles F. Rourke, president of the Medical Society of the County of Schenectady and attending physician (allergy) at Ellis Hospital, Schenectady, spoke on "The Allergic Skin." Dr. Robert D. Whitfield, clinical assistant surgeon at Albany Hospital, Albany, gave a lecture entitled "Ruptured Inter-vertebral Disks."

### Westchester County

"Laboratory research has discovered a new type of infectious organism between the bacteria and the viruses," Dr. Geoffrey W. Rake, director of the division of microbiology of the Squibb Institute for Medical Research, told the Westchester Medical Society at a meeting at New York Hospital, Westchester Division, on September 19.

Dr. Rake showed that lymphogranuloma venereum, psittacosis (commonly known as parrot fever), and trachoma are related diseases in so far as the type of infectious agent causing each is concerned.\*

. . .

Approval of the program for establishment of a county medical laboratory under the supervision of the County Health Department was given by the Westchester Medical Society on August 28.

The laboratory plan is proposed to include cities not in the County Health District, such as Yonkers, Mount Vernon, and New Rochelle, with costs apportioned, but approval from the cities has not yet been wholly given. Request for advice as to its views was made of the medical society recently by the Supervisors.\*

### Wyoming County

The Wyoming County Medical Society and the Livingston County Medical Society held a joint meeting on Thursday evening, October 22. The guest speaker was Dr. P. S. Pelouze, formerly of the University of Pennsylvania, now of the U.S. Public Health Service.\*

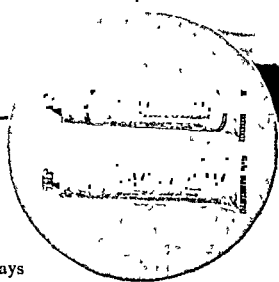
## Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Leon C. Cotes	57	Albany	September 27	Newburgh
George S. Dixon	91	Bellevue	October 9	Manhattan
Moses Goldberg	62	L.I.C. Hosp.	October 4	Manhattan
Benjamin B. Kinne	67	Am. Med. Missionary	October 5	Middletown
Samuel L. Leffel	49	L.I.C. Med.	September 9	Orangeburg
Edward S. McSweeney	67	Bellevue	September 17	Manhattan
William V. Pascual	65	P. & S., N.Y.	September 26	Brooklyn
Wallace D. Russell	86	N.Y. Univ.	September 27	New Hartford
Jeremiah T. Simonson	74	N.Y. Hom.	September 30	Manhattan
Irving R. Teitelbaum	32	Basel	August 28	Bronx
Lloyd C. Warren	61	Baltimore	September 14	Franklin
James L. Winemiller	45	Cornell	October 1	Great Neck



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# Hospital News

## American Hospital Association's Institute on Hospital Purchasing in Chicago, November 13-17

**R**ECOGNIZING that the present pace of fighting in Europe may soon make possible more normal purchasing conditions, the Third Institute on Hospital Purchasing, conducted by the Council on Administrative Practice of the American Hospital Association, will be held at the Knickerbocker Hotel in Chicago, November 13 to 17.

Hospital administrators from among the 3,600 member institutions of the Association, and those concerned with hospital purchasing, will be present to receive and exchange information and methods at this conference, held with the cooperation of the Chicago Hospital Council and the Illinois State Hospital Association.

Developed to tie in wartime purchasing and post-war conditions with normal purchasing procedures, the program will give special emphasis to the pro-

cedures and problems of the small hospital. Morning sessions will be devoted to lectures on the theory and practice of purchasing and the organization of the purchasing department; afternoon seminars will feature open discussion on the purchasing of specific commodities; and evening round tables will clarify any questions remaining unanswered from the day's program, and give the registrant opportunity to present any specific problems from his or her hospital.

Director of the Institute will be Arden E. Hardgrove, chairman of the Purchasing Institute Committee and superintendent of Norton Memorial Infirmary at Louisville, Kentucky. His associate will be F. Hazen Dick, secretary to the Council on Administrative Practice of the American Hospital Association.

## Hospital Staffed by German Doctors Opened in Oklahoma

**T**HE Army Medical Department has established a separate prisoner-of-war hospital staffed with doctors and medical corps men of the prisoner's nationality. The first hospital, Glennan General Hospital, having a bed capacity of 1,700, has been established at Okmulgee, Oklahoma, for German war prisoners. American Army doctors are the chiefs of the medical services. Eight German physicians have been assigned to medical work. It is an-

ticipated the number will be increased to thirty or forty.

The Medical Department's new policy is in accord with the Geneva Convention Treaty, which stipulated that "It shall be lawful for belligerents reciprocally to authorize, by means of private arrangements, the retention in camps of physicians and attendants to care for prisoners of their own country."—*Release from the Office of the Surgeon General*

## What's in a Name? Confusion

**T**HE England General Hospital, the Army's medical center in Atlantic City, will be known hereafter by the full name of the man for whom it was named, Thomas M. England, a lieutenant colonel

who was a human guinea pig in the fight on yellow fever after the Spanish-American War. This move is to correct the impression, widespread and persistent, that the English operate a hospital here.

## Reconditioning News Letter

**A** NEW publication, *Reconditioning News Letter*, is now being distributed monthly by the Office of the Surgeon General to all ASF hospital commanders and service command surgeons. Its aim is to familiarize hospital personnel with new ideas, practices, and procedures connected with the reconditioning

program. Sources of the items published are reports made by inspecting officers from the Surgeon General's Office, chiefs of the reconditioning branches in service commands, medical officers, and others familiar with the program.—*Release from the Office of the Surgeon General, Sept. 15, 1944*

## At the Helm

Henry Hutton Landon, of New York, has been appointed superintendent of the Southampton Hospital, to succeed Miss Ellen Jacobsen, R.N., whose resignation has been announced. Miss Jacobsen has been superintendent since 1921.\*

George W. Peck, president of the Genesee Memorial Hospital, announces the appointment of Mrs. Ruth A. Mackey as superintendent of the hospital,

to succeed Mrs. Eva B. Berry, who recently resigned to take a similar position at Olean.

Mrs. Mackey, who assumed her new position October 1, is a graduate of the Columbia Hospital at Wilkensburg, Pennsylvania, and at present is a director of nurses at Tomkins County Hospital, Ithaca. She recently returned from Bolivia, South America, where she studied and investigated hospitalization.\*

\* Asterisk indicates that item is from a local newspaper.

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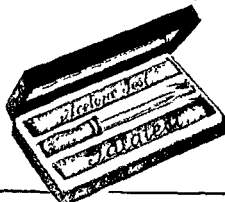
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[Continued from page 2386]

Herbert G. Willis, newly appointed superintendent of Corning Hospital, has taken over his duties in managing the community's hospital. Mr. Willis has been assistant superintendent of the hospital at Bradford, Pennsylvania, for the past five years.

. . .

Col. Robert H. Kennedy, former director of surgery at Beekman Hospital, New York City, and attending surgeon at the New York Post-Graduate Hospital, has been appointed chief of surgical service at Mayo General Hospital, according to an announcement by Colonel H. L. Krafft, commanding officer. Colonel Kennedy, a veteran of World War I, succeeds Col. Emery Neff, former surgical chief, who left for treatment at Percy Jones General Hospital.

The new surgical chief was called to active duty in World War II with the rank of lieutenant colonel in June, 1942. His first assignment was Chief of Surgical Service at Percy Jones General Hospital, which post he held until his arrival at Mayo. He was promoted to colonel on April 3, 1943.

Colonel Kennedy received his medical degree from the College of Physicians and Surgeons at Columbia

University in 1912.—Release from the Office of the Surgeon General, Sept. 15, 1944

. . .

William G. Illinger, for the past five years administrator of the New York State Institute for the Study of Malignant Diseases, Buffalo, has been appointed administrator of the White Plains Hospital, Alexander C. Nagle, president of the Board of Governors, announced.

Mr. Illinger took office October 1, replacing Thomas T. Murray, who has been superintendent-administrator at White Plains Hospital for the past four years.

Mr. Illinger has had fifteen years' experience in the field of hospital administration. He has attended New York University, the University of Chicago, and Cornell University, majoring in both business and hospital administration.

Mr. Illinger is an active member of the American College of Hospital Administrators, the American Hospital Association, New York State Hospital Association, and the Western New York Hospital Council. He has been active in civic and social welfare work in Buffalo, where he is currently vice-president of the board of directors of the Neighborhood House Association.\*

## Improvements

A \$16,600 centralized radio system was presented on August 24 to Halloran General Hospital, at Willowbrook, Staten Island, by Lt. Gen. James G. Harbord, retired chairman of the New York Chapter, American Red Cross, on behalf of the chapter. The ceremonies were held in the American Red Cross building on the post and were attended by high-ranking Army officers, officials of the Red Cross, and representatives of many organizations.

Preceding the first broadcast on the new system, Gray Ladies of the chapter distributed headsets to bed patients in all wards of buildings 2, 25, 27, and 29. The installation permits every patient to tune in a program of his choice from a radio station or from the hospital recreational auditorium or the chapel. Headsets on extension cords can be plugged into outlets in the wards. Of the twenty-one wards so equipped, sixteen were supplied by the New York Chapter, three by the Herman Goldman Foundation, and two by the High School of Music and Art. The installation in the chapel, whereby its services can be broadcast, was donated by the Women's Club of the Deaf.

In accepting the gift as head of the hospital, Brig. Gen. Ralph G. Devoe said:

"The benefit will be more than one of enjoyment. It will be in part therapeutic in that the soldier-patients will no longer feel they are apart from world happenings.

Mrs. Frank R. McCoy, the chapter's liaison representative at Halloran, explained the installation, and Mrs. Helen Thirlwall, Red Cross field director, was the announcer.

. . .

Modern equipment for the care and treatment of poliomyelitis cases has been ordered by the Wyoming Community Hospital of the Wyoming County Polio Foundation. So far the hospital has not needed any equipment and it is hoped it will not later on.

Included in the order is a \$350 hot-pack machine.

Mrs. Walter Solly, Attica, is the representative of the foundation.\*

. . .

Two additional iron lungs for the treatment of two sufferers from infantile paralysis—a 60-year-old man in Charles S. Wilson Memorial Hospital, Johnson City, and a 16-year-old Whitney Point girl in City Hospital—were obtained on September 1 by the Broome County Chapter, National Foundation for Infantile Paralysis, Inc.

Recently, the local organization purchased an iron lung costing \$1,500 for Ideal Hospital but it has not been delivered, he said, because of the military demand for iron lungs. The organization also has purchased a Kenny hot-pack machine for Wilson Hospital at a cost of \$350.\*

. . .

Through the generosity of a Genevan who wishes to be anonymous and who is deeply interested in the security of the children of Geneva and vicinity, an iron lung has been purchased for Geneva General Hospital.

Hospital officials are very grateful for such a gift, which is much needed at this time, and were particularly pleased to know that so much interest is being shown in the health of the community.

It is understood that some local organizations and employees are considering the possibility of furnishing the hospital with additional equipment to make it as complete and up-to-date as possible.

Geneva Zonta Club has purchased accessories for the new iron lung, thereby guaranteeing additional comfort for the patient using the equipment. Accessories for the iron lung have to be purchased separately, and the Zontians felt that this would be a suitable and practical contribution from the club at this particular time.

The Andes Range and Furnace Corporation

[Continued on page 2390]

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[Continued from page 2388]

presented to the hospital two de luxe electric hot plates to be used in the preparation of hot packs for the poliomyelitis patients.

Earl D. Auclair has offered his services as a volunteer to care for the iron lung servicing, not only for the present time but in the future.\*

. . .

Described as a great asset in the fight on infantile

paralysis, a machine called the "polio-washer" has been acquired by the Auburn City Hospital.

This machine is said to reduce the number of steps required in the treatment of poliomyelitis. Only three other hospitals throughout the country have these machines, according to Jerome F. Peck, Jr., acting superintendent of the hospital.

The machines are used in connection with the application of Sister Kenny's method of treating polio by hot packs and have been reported to have been quite successful.\*

## Newsy Notes

Although several workers had not completed their soliciting for the Ellenville Hospital Drive, the amount realized to August 28 was \$3,765.

Returns from workers from churches and organizations in Ellenville and nearby communities amounted to \$2,965; from Benjamin Lonstein and committee, from hotels, \$800. Mr. Lonstein's work was completed by Labor Day; he had full assurance that his committee would collect \$1,000, which is in excess of the sum collected in 1943.\*

. . .

Although there was \$1,564 in the Rhoads General Hospital telephone fund on July 31, it was predicted that the fund would be exhausted soon unless more contributions are received, Benjamin C. Grossman, treasurer, said on August 18.

Originally the free telephone service project promoted by the Jewish War Veterans had been offered only to bed patients. Because most of these saw their families fairly frequently, they made few long-distance calls. The service therefore was extended to all patients.\*

. . .

Workers of the Owego Factory contributed \$319 toward the payment for the iron lung recently installed in Tioga General Hospital by members of the Tioga County American Legion Auxiliary, who conducted a campaign to secure funds for the equipment.\*

. . .

Ten thousand dollars has been received in the eighteen-day drive for funds to pay the \$33,000 debt of the Margaretville Hospital.

The returns indicate that the total may run as high as \$30,000. This statement is based on the fact that about one third of those who subscribed last year had contributed the \$10,000.\*

. . .

One hundred and fifty-five thousand dollars was raised at a twenty-fifth anniversary dinner of the Israel Zion Hospital held recently at the Towers Hotel, Brooklyn. The dinner marked the beginning of the hospital's \$500,000 emergency campaign to complete and equip the new eight-story hospital annex, which will provide 220 additional beds and make possible the introduction of modern scientific equipment.

Guest speakers included Edward Lazansky, former Presiding Justice of the Appellate Division, Second District; Col. Samuel J. Kopetzky, chief of the medical division, New York City headquarters

of the Selective Service system; and former Assemblyman Albert D. Schanzer.\*

. . .

An employer-financed social security plan that will cost unionized hotels in New York City an estimated \$750,000 to \$900,000 annually and will provide benefits for 25,000 hotel workers was announced by Edward P. Mulrooney, impartial chairman of the hotel industry.

Retroactive to June 1, the 132 hotels covered by the plan will pay into the fund 6 per cent of their payrolls for the first six months and 3 per cent thereafter. The double payment for the first six months was directed by the three-man arbitration commission that formulated the plan so that a reserve might be accumulated quickly for the insurance fund.

Others on the commission headed by Mr. Mulrooney were Fred O. Cosgrove, vice-president of the Knott Hotel Corporation, representing the Hotel Association of New York City, and Jay Rubin, president of the New York Hotel Trades Council, American Federation of Labor. Their approval of the plan was unanimous, according to Mr. Mulrooney.

The majority of the hotels in the city, including all the large ones except the Waldorf-Astoria and the Lexington, are included under the plan, which, Mr. Mulrooney said, would become part of the current contract between the hotels and the union in effect until June 1, 1946. He estimated that 80 per cent of the city's hotel workers would benefit. Under the new social security arrangement union members in good standing will receive a life insurance policy, sickness and accident insurance, and family hospitalization.\*

. . .

Plans to expend \$209,000 for additional state care of poliomyelitis victims stricken in an epidemic which has claimed 2,809 reported persons were announced on September 2 in Albany.

Governor Dewey said the money would be added to the regular appropriation of the State Health Department and would be used chiefly to enlarge facilities of the New York Reconstruction Home at West Haverstraw. It is planned to add 100 beds to the 130 now available there for the aftercare of stricken children.

Infantile paralysis patients beyond the acute stage may be cared for by the state under provisions of the Physically Handicapped Children's Act. If more than 21 years old, they may receive treatment under provisions of the Shaw Act.

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# Medical Legislation

(Special Bulletin issued by the Legislative Bureau of the Medical Society of the State of New York, September 18, 1944)

THE last Legislature passed a bill, which was signed by the Governor and became Chapter 387 of the Laws of 1944, to "create a temporary commission of two senators, two assemblymen, and ten persons appointed by the Governor, four to be physicians, two laymen, one hospital administrator, one bedside registered nurse, one hospital nurse, and one public health nurse, to make studies, surveys, and investigations of programs for medical care of persons in the State, especially needy sick; and appropriating \$40,000."

Following is a list of the members of this commission:

## *Senators*

Lester Baum, of New York County  
Lazarus Joseph, of Bronx County

## *Assemblymen*

Lee B. Mailler, of Orange County, *Vice-Chairman*  
Leonard Farbstein, of New York County

## *Physicians*

George M. Mackenzie, M.D., Cooperstown  
Herman G. Weiskotten, M.D., Syracuse

Lucien M. Brown, M.D., New York City  
Robert I. Levy, M. D., New York City

## *Laymen*

Rev. John J. Bingham, New York City  
Garrard B. Winston (Lawyer), New York City

## *Hospital Administrator*

Basil C. MacLean, M.D., Rochester, *Chairman*

## *Bedside Registered Nurse*

Miss Ruth Hall, Buffalo

## *Hospital Nurse*

Miss Agnes Gelinas, New York City

## *Public Health Nurse*

Miss Marion W. Sheahan, Albany

## *Ex-Officio*

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Mental Hygiene

JOHN L. BAUER

WALTER W. MOTT

LEO F. SIMPSON

*Committee on Legislation*

## BRITISH MILITARY PSYCHIATRIST TO GIVE SALMON LECTURES

Brig. Gen. J. R. Rees, consultant psychiatrist to the British Army, will deliver the Salmon Lectures for 1944 at the New York Academy of Medicine on three successive evenings—November 20, 21, and 22 at 8:30 P.M.

The Salmon Committee on Psychiatry and Mental Hygiene, appointed by the Council of the New York Academy of Medicine, annually invites an outstanding specialist in the field of psychiatry, neurology, or applied sciences, who has made the greatest contribution to his specialty during the preceding year, to deliver the lecture series.

As a captain in the R.A.M.C. in the first World War, Brigadier General Rees saw service in Belgium, France, Mesopotamia, and North Persia. He was formerly neurological specialist, Ministry of Pensions, and medical superintendent, Bowden House. He now holds the post of medical director, The Tavistock Clinic (The Institute of Medical Psychology).

The subject of Brigadier General Rees's lecture on November 20 will be "The Frontiers Extend," in which he will review the experiences of the war in so far as they open up new psychiatric responsibilities. He will trace the developments of the new social psychiatry and of new practices in selection and placement engendered by the realism of the war period. He will present material to show that war-time priorities are prophylaxis in the building up of mental health.

On November 21, the speaker's subject will be "Opportunities Emerge." Asserting that training methods, morale, and disciplinary problems have been matters of urgency in the Army, as indeed they have been also in civilian life, Brigadier General Rees will discuss the fact that men and women of all kinds and qualities challenge our psychiatric skill

and that war psychiatry has contributed to the women's services, to adult education, and to re-socialization of the sick and maimed, as well as in matters of intelligence and aptitude testing and selection of officer candidates and other special groups on the basis of studies in character, personality, leadership, and stability.

On November 22, in the "The Way Ahead," Brigadier General Rees will survey both the old and new responsibilities of psychiatry, in which he will indicate that individual breakdown is perhaps less important than group breakdown.

Following these lectures at the Academy of Medicine in New York, Brigadier General Rees will present condensations of the three Salmon Lectures in New Orleans, San Antonio, Houston, Los Angeles, Boston, and Montreal.

The Salmon Committee on Psychiatry and Mental Hygiene, which is sponsoring these lectures, includes in its membership the following: Dr. C. C. Burlingame, *Chairman*, psychiatrist-in-chief, The Institute of Living, Hartford, Connecticut; Dr. Samuel W. Hamilton, Division of Mental Hygiene, U.S. Public Health Service, Washington, D.C.; Dr. William Healy, consulting director, Judge Baker Guidance Center for Childhood and Youth, Boston; Dr. Adolph Meyer, psychiatrist-in-chief, emeritus, of the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, Baltimore; Dr. Edward A. Strecker, Department of Psychiatry, University of Pennsylvania Medical School, Philadelphia; Dr. Edwin G. Zabriskie, professor of clinical neurology, Columbia University Medical School, New York City; Dr. Arthur F. Chace, president, New York Academy of Medicine, New York City; Dr. Herbert B. Wilcox, director, New York Academy of Medicine, New York City.

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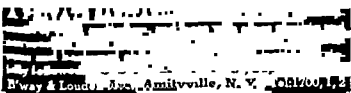
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# Honor Roll

## Medical Society of the State of New York

### Member Physicians in the Armed Forces

(By County Societies)

#### Supplementary List\*

##### *Dutchess County*

Cummings, Joseph L.  
Forse, Max A.

##### *Kings County*

Mautner, Hermann (P. A. Surg.  
U.S.P.H.S.)  
Wishnow, Hyman L.

##### *New York County*

Fallon, John  
Lindenberg, Paul  
Siegal, Julius  
Spock, Benjamin  
Tomasulo, Albert

##### *Queens County*

Stahl, Albert E. (Lt.)

##### *Rockland County*

Lang, Joseph T.

##### *Schenectady County*

Walker, Donald C. (Lt.)

##### *Westchester County*

Baker, Clifford C. (Lt.)

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\* This list is the twenty-sixth supplement to the Honor Roll published in the December 15, 1942, issue. Other supplements appeared in the January 1, January 15, February 15, March 1, March 15, April 15, June 1, July 1, August 1, September 1, October 15, November 15, December 15, 1943, January 15, February 1, February 15, March 1, May 1, May 15, June 1, July 1, July 15, August 1, September 1, and October 1, 1944, issues.—*Editor*

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#### VD EDUCATION FILMS

The motion-picture films "*Magic Bullets*" and "*To the people of the United States*," for use in venereal disease education, are now ready for distribution.

"*Magic Bullets*" is available in a three-reel version of the famous Warner Brothers feature length film starring Edward G. Robinson and depicting Ehrlich's discovery and early use of arsenical drugs in the treatment of syphilis. The U.S.P.H.S. version retains the scientific and medical story of the original eleven-reel film. Review prints have been sent to State Health Officers on fifteen-day loan. The film can be purchased from DeLuxe-Laboratories, 850 Tenth Avenue, New York 19, New York, at approximately \$27.50 for 16 mm. prints with reel and cans, and at approximately \$48.00 for 35 mm. prints.

"*To the People of the United States*," a two-reel educational film, starring Jean Hersholt, was pro-

duced by Walter Wanger, prominent Hollywood producer, and the California State Health Department, with the cooperation of the U.S.P.H.S. Through the courtesy of the California State Health Department, 16 mm. prints of this film have been sent to other state health departments. Additional 16 mm. prints can be purchased from Consolidated Film Industries, 959 Seward Street, Hollywood, California, at approximately \$20, with reel and cans. Since the film can be shown to general audiences, 35 mm. prints are being provided to health officers who request them for such use as they may desire. Additional 35 mm. prints can be bought from Consolidated at approximately \$35. Purchasers other than official agencies should remit with order.

U.S.P.H.S. authorization is not necessary for purchase of this film.—*VD War Letter, Aug. 30, 1944*

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#### SOCIALIZED MEDICINE

Recently a business man accosted a friend and said: "Well, doctor, I see where they are going to socialize your business under the Federal Security Act." The doctor, who had spent his life helping the ill and afflicted in his community, regardless of their financial circumstances, said: "Oh, no, my friend, they are going to socialize you. When the federal government takes six per cent of your earnings and six per cent from your employer on wages paid you up to a specified amount, tells you what doctor to go

to, when, and where, you will be getting the benefits of socialism, not me. When that day comes I will go back to pipe fitting, which is just working with a different kind of pipes than those in a human."

Yes, it's the public, not the doctors, that would suffer from politically appointed physicians. There would no longer be incentive for the better doctors to carry on. An independent pipe fitter would have more future than a socialized doctor.—*Editorial in the Riverhead (N.Y.) News*

# ANNOUNCEMENT

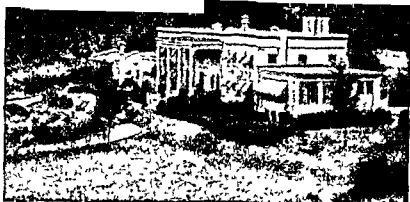
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# Woman's Auxiliary

## To the Medical Society of the State of New York

### County News

**Fulton County.** The members of the Fulton and Montgomery County auxiliaries to the medical societies of these counties held a dinner meeting at the Towers, in Amsterdam, September 19. The State President, Mrs. Carlton Wertz, of Buffalo, was guest speaker. She was introduced by Mrs. Joseph Thompson, of Gloversville, president of the Fulton County Auxiliary.

Mrs. Wertz told of the tireless efforts of doctors' wives in assisting in the care and treatment of poliomyelitis patients. She added that with the consent of the Erie County Medical Society an "Infantile Paralysis Day" was held. The women of the auxiliary procured scientific speakers for the doctors, and others for the lay people. Many notes of thanks were received for the programs.

Mrs. Wertz added that in this time of stress, doctors' wives can be of the greatest assistance to their husbands in carrying on their work. She also asked that auxiliary members be especially considerate of the women whose husbands are in service.

This meeting was enjoyed so much that the two county auxiliaries agreed to hold another joint session at a later date.

Many thanks to Betty Wertz for a most pleasant evening!

**Nassau County.** On Tuesday, September 19, the auxiliary had an executive board meeting. Mrs. Louis Van Kleeck presided at the meeting. Business for the coming year was discussed and the program was presented. The program is as follows:

September 29, 1944—Membership tea.

October 31, 1944—Meeting. The topic was "Nurse Recruitment."

November 28, 1944, 8:00 P.M.—Meeting. The topic, "United Medical Service."

December 12, 1944, 8:00 P.M.—Christmas party.

January 30, 1945, 8:00 P.M.—Joint meeting with Medical Society at Mercy Hospital R.U.C. The speaker will be a Supreme Court Justice.

February 27, 1945, 8:00 P.M.—Meeting. The topic, "Seeing Eye Dog."

March 27, 1945, 3:00 P.M.—Meeting. The topic, "Cancer Institute."

April 24, 1945, 8:00 P.M.—Meeting. The speaker will be Dr. Joseph Lawrence.

May 29, 1945, 8:00 P.M.—Annual Meeting.

June 26, 1945, 1:00 P.M.—Luncheon.

Plans for the membership tea were discussed at the executive board meeting. The speakers at the tea were Dr. Austin B. Johnson, president of the

Nassau County Medical Society, Dr. Louis Bauer, trustee of the A.M.A., Dr. E. K. Horton, and Dr. Louis A. Van Kleeck. Entertainment was furnished by Miss Gertrude Bary, pianist, and Miss Catherine Molter, harpist. Mrs. August Fink, membership chairman, was in charge of arrangements.

The members had a box lunch after the meeting, which took place at 10:00 A.M. at Nassau Hospital in Mineola. At 1:00 P.M. cancer dressings were made under the supervision of Mrs. Anne Moore, consultant nurse for the Nassau County Cancer Committee.

**Orange County.** The first executive meeting of the year was held at the Mitchell Inn in Middletown on September 21. The reading of the annual minutes showed that there were sixty-four paid-up members, and of these there are twenty-six members whose husbands are in service. From records available, members of Orange County had given about 15,000 hours of war work. The new president, Mrs. Harry L. Chant, presided.

**Schenectady County.** The Schenectady County Woman's Auxiliary has elected the following women as officers for the coming year: Mrs. Arthur Congdon, president; Mrs. William J. Jameson, president-elect; Mrs. Alfred Grussner, first vice-president; Mrs. Marcellus Clowe, second vice-president; Mrs. Edward O'Keefe, treasurer; Mrs. Ralph Hotchkiss, historian; Mrs. James Blake, corresponding secretary; Mrs. Roland Faulkner, recording secretary.

The election was held at the closing meeting at the lovely home of Mrs. F. Leslie Sullivan on Sunnyside Road in Scotia.

The first fall meeting was held October 24 at Hotel Van Curler in Schenectady. Dr. Charles Rourke, president of the county medical society, was the speaker.

The executive board meeting was held September 21 at the home of Mrs. Arthur Congdon.

**Suffolk County.** Suffolk County Auxiliary met on August 3 for dinner in the Shoreham in Sayville. Mrs. E. R. Hildreth presided in the absence of the president, Mrs. S. A. Arnold. Reports were made by all the committee chairmen, and a stirring debate followed the business meeting. The topic of the debate was the Murray-Wagner-Dingell bill. Mrs. Grover Silliman spoke in defense of the bill and Mrs. George Bergmann spoke in opposition. The discussion was so lively that further debate had to be postponed until the next meeting, when Mrs. L. H. Kice, the State legislative chairman, will be the guest speaker.

### FEW WOMEN ENROLL IN MEDICAL SCHOOLS

A recent survey of 15 leading medical colleges in seven cities over the country shows that the expected decrease in enrollment in 1945 will not be made up, in any large way, by women students. Only nine of the 15 schools reported a slight increase in feminine enrollment. Deans declined to admit

prejudice against women students, but a few indicated that they had little intention of encouraging women to enroll. The notable exception was at Tufts Medical School, Boston, where a spokesman reported the institution of a program to show women the advantage of studying medicine.

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Allegany.....	J. F. Glosser.....Wellsville	E. B. Perry.....Belfast	D. Grey.....Belfast
Bronx.....	Moses H. Krakow.....Bronx	G. B. Gilmore.....Bronx	J. A. Landy.....Bronx
Broome.....	F. G. Moore.....Endicott	J. C. Zillhardt.....Binghamton	L. J. Flanagan.....Binghamton
Cattaraugus...	M. G. Sheldon.....Olean	W. R. Ames.....Olean	W. R. Ames.....Olean
Cayuga.....	H. S. Bull.....Auburn	L. W. Sincerbeaux...Auburn	L. H. Rothschild.....Auburn
Chautauqua...	O. T. Barber.....Fredonia	E. Bieber.....Dunkirk	C. E. Hallenbeck.....Dunkirk
Chemung.....	R. S. Howland.....Elmira	J. H. Burke, Jr.....Elmira	F. M. Butler.....Elmira
Chenango.....	E. F. Gibson.....Norwich	J. H. Stewart.....Norwich	J. H. Stewart.....Norwich
Clinton.....	P. B. Barton.....Plattsburg	T. A. Rogers.....Plattsburg	T. A. Rogers.....Plattsburg
Columbia.....	C. L. Schultz.....Philmont	L. J. Early.....Hudson	L. J. Early.....Hudson
Cortland.....	R. P. Carpenter.....Cortland	W. A. Wall.....Cortland	F. F. Sornberger.....Cortland
Delaware.....	P. J. Hust.....Hamden	F. R. Bates.....Walton	F. R. Bates.....Walton
Dutchess.....	H. A. LaBurt.....Queens Village	A. A. Rosenberg.....Poughkeepsie	A. A. Rosenberg.....Poughkeepsie
Erie.....	J. D. Naples.....Buffalo	L. W. Beamis.....Buffalo	R. M. DeGraff.....Buffalo
Essex.....	G. L. Knapp.....Ticonderoga	J. E. Glavin.....Port Henry	J. E. Glavin.....Port Henry
Franklin.....	P. W. Gorman.....Fort Covington	D. H. Van Dyke.....Malone	D. H. Van Dyke.....Malone
Fulton.....	M. Kennedy.....Gloversville	L. Tremante.....Gloversville	A. H. Sarno.....Johnstown
Genesee.....	I. A. Cole.....Batavia	P. J. Di Natale.....Batavia	P. J. Di Natale.....Batavia
Greene.....	R. E. Persons.....Cairo	W. M. Rapp.....Catskill	M. H. Atkinson.....Catskill
Herkimer.....	D. F. Aloisio.....Herkimer	F. C. Sabin.....Little Falls	A. L. Fagan.....Herkimer
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Lewis.....	D. J. O'Connor.....Croghan	H. E. Chapin.....Lowville	H. E. Chapin.....Lowville
Livingston...	G. J. Doolittle.....Sonyea	F. J. Hamilton.....Hemlock	F. J. Hamilton.....Hemlock
Madison.....	A. S. Broga.....Oneida	L. S. Preston.....Oneida	G. S. Pixley.....Canastota
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Montgomery..	C. A. Spence.....Amsterdam	S. Partyka.....Amsterdam	M. T. Woodhead.....Amsterdam
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New York.....	C. Berens.....New York	B. W. Hamilton.....New York	F. Beekman.....New York
Niagara.....	G. Guillemont.....Niagara Falls	C. M. Brent.....Niagara Falls	G. C. Stoll.....Niagara Falls
Oneida.....	F. M. Miller, Jr.....Utica	O. J. McKendree.....Utica	H. D. MacFarland.....Utica
Onondaga.....	D. V. Needham.....Syracuse	F. N. Marty.....Syracuse	I. L. Ershler.....Syracuse
Ontario.....	J. W. Howard.....East Bloomfield	D. A. Eiseline.....Shortsville	D. A. Eiseline.....Shortsville
Orange.....	W. I. Neller.....Middletown	E. C. Waterbury.....Newburgh	E. C. Waterbury.....Newburgh
Orleans.....	J. S. Roach.....Medina	J. Dugan.....Albion	J. Dugan.....Albion
Oswego.....	H. J. La Tulip.....Oswego	M. W. Kogan.....Oswego	M. W. Kogan.....Oswego
Otsego.....	L. S. House.....Oneonta	M. F. Murray.....Cooperstown	P. von Haeseler.....Gilbertsville
Putnam.....	William P. Kelly, Jr..Carmel	Garrett W. Vink.....Carmel	Garrett W. Vink.....Carmel
Queens.....	W. G. Frey, Jr.....Forest Hills	E. A. Wolff.....Forest Hills	A. A. Fischl.....Long Island City
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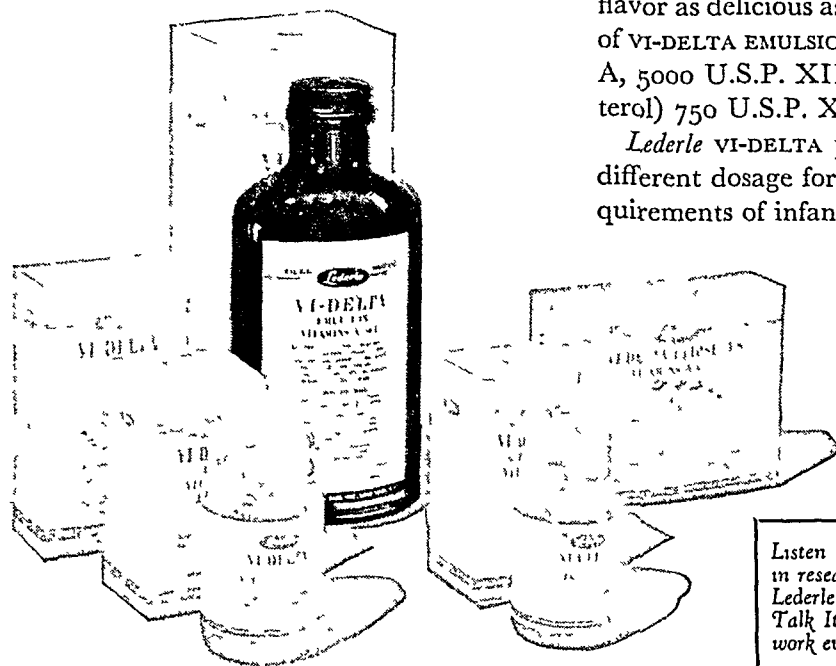
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# NEW YORK STATE JOURNAL OF MEDICINE

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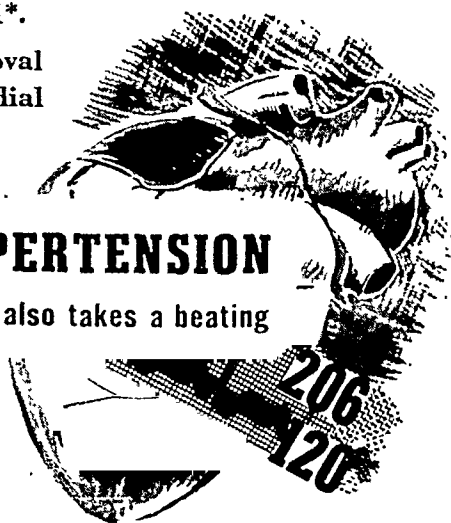
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TO: Advertising Manager

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I would suggest that you prepare copy, re-stating our attitude of such information to the laity and offer publication of such information to the laity and offer to the profession our most recent literature describing clinical results with androgenic preparations in these conditions.

NOTE:

*Run this memo as is - it is good,  
clear, understandable copy*  
PR



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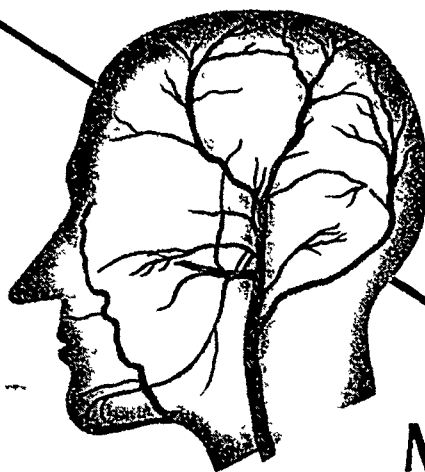
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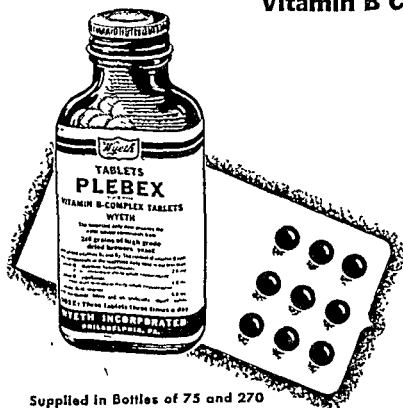
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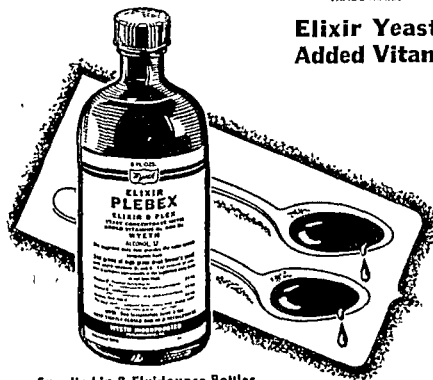
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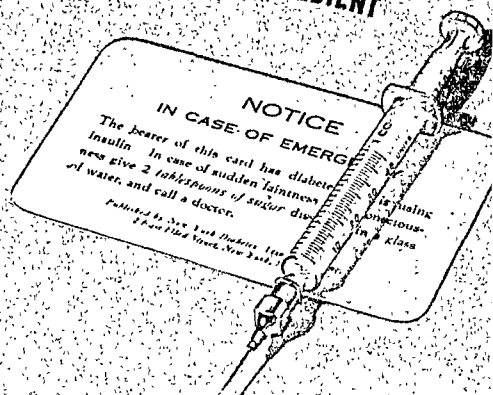
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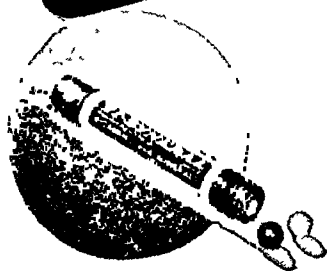
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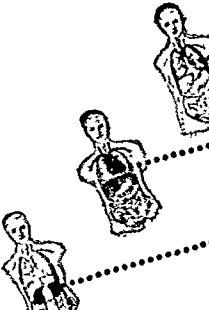
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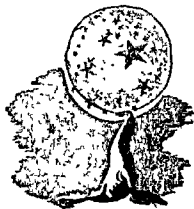
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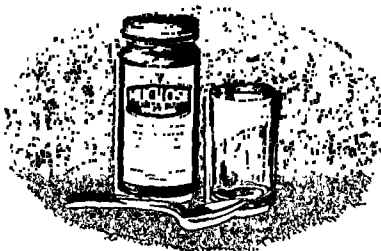


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## fully ORALLY ACTIVE

"Premarin" is fully orally active. Whenever estrogenic therapy is indicated, "Premarin" provides a highly effective and clinically proved medium for oral administration. Although highly potent, "Premarin" is exceptionally well tolerated and, being derived exclusively from natural sources, it has the desirable property of imparting a feeling of well-being. In "Premarin" the busy physician will find a medium for estrogenic therapy that is most effective, convenient and essentially safe.

"Premarin" is now  $\frac{1}{2}$  lower in cost (July, 1944)

HIGHLY POTENT  
WATER SOLUBLE  
NATURALLY OCCURRING  
ESSENTIALLY SAFE  
WELL TOLERATED  
IMPARTS A FEELING OF WELL-BEING



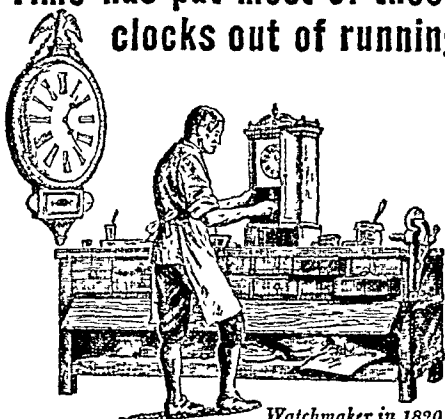
# "Premarin"

Reg. U.S. Pat. Off.

Tablets

CONJUGATED ESTROGENS (equine)

Time has put most of these  
clocks out of running



Watchmaker in 1820

## But time has added to Johnnie Walker's popularity

Johnnie Walker still  
sets the pace among  
fine scotch whiskies.  
You get an extra mar-  
gin of mellowness  
backed up by a fla-  
vour that's in a class  
by itself.

Popular Johnnie  
Walker can't be every-  
where all the time these  
days. If occasionally  
he is "out" when you  
call... call again.



BORN 1820  
Still going strong

# JOHNNIE WALKER



**BLENDED  
SCOTCH WHISKY**

**RED LABEL**

**BLACK LABEL**

Both 86.8 Proof

Canada Dry Ginger Ale, Inc.  
New York, N. Y.

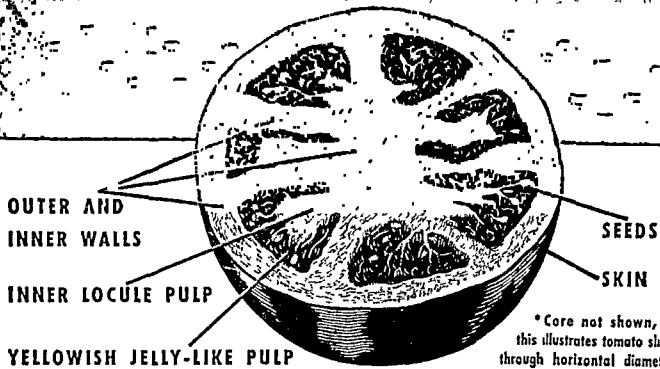
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**BUY UNITED STATES  
WAR BONDS AND STAMPS**

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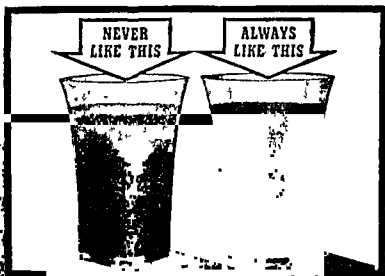
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# THE *Anatomy* OF A KEMP'S SUN-RAYED TOMATO

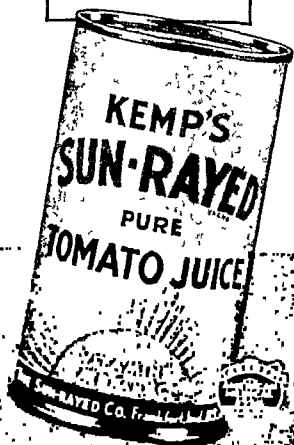


● Except for skin, seeds and core,\* all regions of this tomato are important to you in tomato juice. That's why we use the whole tomato, minus skin, seeds and core, for Kemp's Sun-Rayed brand Tomato Juice. Note proportion of three primary regions pictured above, left. Just right for finest flavor, high nutrition, rich red color and proper consistency. No ordinary field tomatoes these, but a special strain developed through 23 generations of tomato culture. We convert these tomatoes into Kemp's Sun-Rayed by our patented process which insures high retention of vitamins A, B<sub>1</sub> and C.

Packed by  
**THE SUN-RAYED CO.**  
Frankfort, Indiana  
• • •  
N. Y. Agent  
**SEGGERMAN-NIXON CORP.**  
111 8th Ave.



**NON-SEPARATING**



For results it's best to have  
**EVERYTHING\***



**\*ELIXIR BEPADIN is the COMPLETE B complex...**

*Most Vitamin B deficiencies* are multiple ...and therefore require the *complete* B complex for thoroughly effective results.

*Cereals, liver, and yeast* are the richest, most important source of vitamin B complex. But not all the lesser known B factors are present in each of these 3 sources.

*Elixir Bepadin, I.V. C., however, combines all 3 sources*—rice bran extract, liver con-

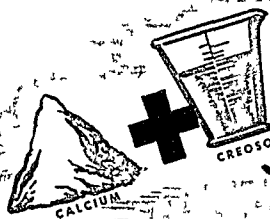
centrate, yeast extract—to supply in Natural form the *complete* B complex.

*Added...* are thiamine, hydrochloride, riboflavin, pyridoxine hydrochloride, and calcium pantothenate—in an appetizing and delicious sherry wine vehicle.

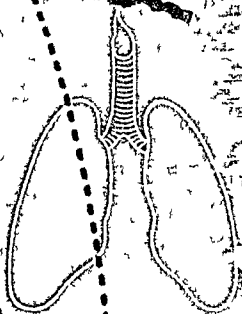
In 16 oz. bottles. A product of The International Vitamin Corporation, "The House of Vitamins," New York, Dallas, Chicago, Los Angeles.

**I.V.C. ELIXIR BEPADIN**  
REG U S PAT OFF

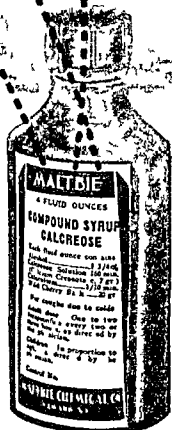
"IN UNION THERE IS



*Better  
creosote  
therapy*



- It is not surprising that physicians call CALCREOSE "a happy combination" In this popular cough preparation, the potent bronchial expectorant and antiseptic—creosote—is chemically combined with calcium thereby increasing creosote's bacteriostatic and bactericidal action up to three times, and (at the same time) insuring equally good absorption<sup>1</sup>
- Thus, Calcreose possesses all the well known benefits of creosote<sup>2</sup>, yet successfully masks its disagreeable odor and taste
- In many bronchial and respiratory affections, Calcreose will aid in lessening cough, diminishing expectoration, reducing its purulency, and deodorizing sputum (in fetor of bronchial secretions)
- Especially important Calcreose is freely tolerated, even in large doses, it causes no gastric irritation or nauseous reaction<sup>1</sup>



<sup>1</sup>Fellows, E. J. J Pharm & Exper Ther 60 178 183 1937

<sup>2</sup>Stevens, M E et al Canad Med. Assn. J 48 124 1943

# CALCREOSE

THE MALTBIÉ CHEMICAL COMPANY • NEWARK, N. J.

**DOSAGE** 2 tablets Calcreose 4 gr., or 1 to 2 tspfl Compound Syrup Calcreose, as preferred

**AVAILABLE.** Tablets Calcreose 4 gr., brown coated, in bottles of 100, 500 or 1000, Compound Syrup Calcreose in pint or gallon bottles.





## NOT A DISEASE *...but what an Experience!*

—the experience 80% of women encounter in varied degree at the 45 to 50 epoch.

That some women meet the menopause as a blessing—pass spontaneously from years of child bearing and of worrying to serene, if plumper, matrons—suggests that more can be so transformed, by the physician's good management.

When vasomotor and psychoneurotic symptoms predominate

Breon also  
makes  
Diethylstil-  
bestrol—  
the synthetic  
estrogen  
effective by  
mouth.

## ESTROGENIC SUBSTANCE - Breon

is the "doctor's aid." This ovarian follicular hormone preparation, standardized in total estrogenic potency, is assayed by the vaginal smear method; is of proved uniform purity as determined by melting points, optical rotation, and bioassay.

Each 1000 I. U. of Estrogenic Substance-Breon produces the equivalent in estrogenic effect of 0.1 mg. estrone.



**George A. Breon & Company**

NEW YORK

ATLANTA

KANSAS CITY, MO.

LOS ANGELES

SEATTLE

# NASAL DECONGESTANT

## SULMEFRIN

Squibb Stabilized Aqueous Solution Sulfathiazole Sodium (2.5%)  
with *dl*-desoxyephedrine hydrochloride (0.125%)

### FACILITATES DRAINAGE . . . IMPROVES VENTILATION . . .

In consequence of the vasoconstrictive action of desoxyephedrine hydrochloride.

Widely used for intranasal treatment of sinusitis, rhinitis, pharyngitis and laryngitis. Sulmefrin is mildly alkaline (pH about 9.0) and exerts locally the anti-bacterial action of sodium sulfathiazole which has almost optimum activity at this pH level.

Sulmefrin may be administered by spray, drops or tamponage. Supplied in 1-oz. dropper packages and 1-pint bottles. Solution is pink-tinted.

Sulmefrin is a trade-mark of E. R. Squibb & Sons.



**E. R. SQUIBB & SONS**

Manufacturing Chemists to the Medical Profession Since 1858

# A Rational, Systemic

**E**FFECTIVE treatment of chronic arthritis perforce must aim at correction of systemic as well as joint involvements.

Darthron, the fruit of years of clinical observation, is compounded especially for this purpose. In a single capsule it supplies massive dosage vitamin D plus adequate amounts of the other vitamins needed for optimal systemic improvement in chronic arthritis.

The antiarthritic value of vitamin D in maximal tolerated dosage is well established.<sup>1, 2, 3, 4, 5</sup> When this mode of therapy was first discovered, many of the other vitamins were still unknown. The more recent studies emphatically stress their importance in antiarthritic management.<sup>6, 7, 8</sup>

## SYSTEMIC INVOLVEMENT

Loss of weight  
Weakness  
Fatigability  
Anemia  
Neuritis  
Gastrointestinal disturbances  
Liver dysfunction  
Impaired carbohydrate metabolism  
Early arteriosclerosis

<sup>1</sup> Read, C. T.; Struck, H. C., and Steck, T. E.: Vitamin D. Chemistry, Physiology, Pharmacology, Pathology, Experimental and Clinical Investigation, Chicago, University of Chicago Press, 1939, p. 310.

<sup>2</sup> Livingston, S. K.: Vitamin D and Fever Therapy in Chronic Arthritis, *Arch. Phys. Therapy* 17:704 (Nov.) 1936.

<sup>3</sup> Farley, R. T.: Management of Arthritis, *Illinois M. J.* 71:74 (Jan.) 1937.

<sup>4</sup> Farley, R. T.; Spierling, H. F., and Kraines, S. H.: Five-Year Study of Arthritic Patients; Laboratory and Clinical Observations, *Indust. Med.* 10:341 (Aug.) 1941.

<sup>5</sup> Snyder, R. G., and Squires, W. H.: A Preliminary Report on Activated Ergosterol;

Form of High Dosage Vitamin D in Treatment of Chronic Arthritis, *New York State J. Med.* 40:708 (May 1) 1940.

<sup>6</sup> Snyder, R. G.; Squires, W. H.; Forster, J. W.; Traeger, C. H., and Wagner, L. C.: The Treatment of Two Hundred Cases of Chronic Arthritis, *Indust. Med.* 7:295 (July) 1942.

<sup>7</sup> Snyder, R. G.; Squires, W. H., and Forster, J. W.: A Six-Year Study of Arthritis Therapy, *Indust. Med.* 12:291 (May) 1943.

<sup>8</sup> Levinthal, D. H.; Logan, C. E.; Kohn, K. H., and Fishbein, W. I.: Practical Management of Arthritis, *Medical and Orthopedic, Indust. Med.* 13:377 (May) 1944.



# Approach to Arthritis

Each capsule of Darthron presents vitamin D, 50,000 U.S.P. units; vitamin A, 5000 U.S.P. units; ascorbic acid, 50 mg.; thiamine hydrochloride, 2 mg.; riboflavin, 1 mg.; pyridoxine hydrochloride, 0.1 mg.; calcium pantothenate, 0.333 mg.; niacinamide, 10 mg.; mixed natural tocopherols, 3.4 mg.

## RATIONALE OF DARTHRON FORMULA

**Vitamin A** increases the tolerance for massive dosage of vitamin D

**Vitamin A** deficiency in the blood of rheumatic patients has been reported.

**Ascorbic acid (Vitamin C)** is essential for the normal development of intercellular material of connective tissue. Deficiency produces weakness, hemorrhage due to decreased cohesion of vascular endothelium, osteoporosis of bone, delayed wound healing.

**Thiamine** is essential for the physiologic activity of all tissues because of its role in carbohydrate metabolism. Deficiency causes weakness, loss of weight, fatigue, neuritis, gastrointestinal disturbances and impaired carbohydrate metabolism.

**Riboflavin** combines with phosphoric acid to form an oxidation enzyme essential for carbohydrate metabolism.

**Pyridoxine** plays a role in the utilization of unsaturated fatty acids and in hemopoiesis. It is effective in com-

bating hypochromic anemia, nervousness, weakness, difficulty in walking, and insomnia.

**Calcium Pantothenate** has been reported to be essential in maintaining the integrity of the central nervous system and the endocrine glands.

**Niacinamide** is an integral part of the coenzyme molecule essential in fermentation, glycolysis, and respiration. Specific in the pellagrous symptoms of dermatitis, in psychotic affections, and intestinal dysfunction.

**Mixed Natural Tocopherols (Vitamin E)** have been found useful in neuromuscular disorders and primary fibrositis.

Many of these conditions are commonly encountered in arthritis.

Physicians are invited to send for comprehensive literature and samples.

J. B. ROERIG & COMPANY

526 Lake Shore Drive • Chicago 11 Illinois

# DARTHRON

*for the Arthritic*





*"We're Both  
In Luck,"  
says Mommy*

You might say luck runs in the family—for the hearty, appetizing cereal this youngster gets is the same Heckers' Cream Farina his mother and grandmother knew as a "baby's first solid food."

But it's more than that these days. Enriched with Vitamin B<sub>1</sub>, niacin and nutritional iron, it's better than ever, now. And its heart-of-the-wheat goodness makes it a cereal the whole family goes for—and that helps simplify busy

mothers' problems. Quick to cook, quick to nourish, quick to digest, it's wonderful for baby, and satisfies the grown-ups too.

That's something to think about when you talk baby cereals to mothers. Their days are busy, their tasks many. You can recommend Heckers' Cream Farina as a grand baby cereal without hesitation—and do a favor for mother at the same time.

*The Grand Baby Cereal That The Whole Family Loves*

Would You Like a Package of  
Heckers' Cream Farina?

Won't you let us send you a sample of Cream Farina so that you will know at first hand how good it is? Simply mail your request to THE BEST FOODS, INC., Dept. 11, 88 Lexington Avenue, New York 16, N. Y.



**HECKERS' Cream  
Enriched FARINA**



THE BEST FOODS, INC., 88 Lexington Avenue,

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New York 16, N. Y.



# Protein Digestion *in* PREGNANCY

It is estimated that twenty-five to seventy-five percent of pregnant women develop hypochlorhydria during the course of their pregnancy.

Limited peptic digestion accompanying hypochlorhydria may lead to protein depletion of the mother and impaired growth of the fetus.

When hypochlorhydria is present, prescribe AMINOIDS\* for your patients. Because this protein hydrolysate product supplies pre-digested protein, the need for peptic digestion is largely obviated.

AMINOIDS contains the amino acids and peptides present in four high quality protein foods—beef, wheat, milk and yeast. One tablespoonful four times daily supplies 16 grams of protein as hydrolysate. Amounts up to and exceeding 100 grams daily may be assimilated with ease.

## Aminoids

REG. U. S. PAT. OFF.

**A PROTEIN HYDROLYSATE PRODUCT**



### *For Oral Administration*

Supplied as dry granules in bottles containing 6 ounces, AMINOIDS is palatably taken in any hot or cold beverage.

\*The name AMINOIDS is the registered trade mark of The Arlington Chemical Company.

THE ARLINGTON CHEMICAL COMPANY  
YONKERS 1 NEW YORK

*Arlington*

# Active vs. PASSIVE HYPEREMIA

In local inflammations, passive hyperemia or congestion retards healing. An increase in the circulation from the affected area is, therefore, desirable.

An important advantage of Numotizine in the treatment of inflammation is its ability to increase local circulation in both directions, thereby assisting the natural healing process.

The slow, steady release of guaiacol, beechwood creosote and methyl salicylate from the im-

proved Numotizine base stimulates local circulation and produces systemic analgesia for a period of 8 hours or more from a single application.

Numotizine is indicated in chest conditions, sprains, bronchitis, glandular swellings, furunculosis, etc.

**NUMOTIZINE**  
**THE PRESCRIPTION CATAPLASM**  
**NUMOTIZINE**

Supplied in 4, 8, 15 and 30 ounce resealable glass jars.

*Numotizine is ethically presented—not advertised to the laity.*

**NUMOTIZINE, INC., 900 NORTH FRANKLIN STREET, CHICAGO, ILL.**



#### FORMULA:

Guaiacol . . . . .	2.60
Beechwood Creosote . . . . .	13.02
Methyl Salicylate . . . . .	2.60
Sol. Formaldehyde . . . . .	2.60
C. P. Glycerine and Aluminium Silicate q. s. 1000 parts	





## Major surgery... severe infection... pregnancy

All the states and diseases which heighten metabolism, limit the diet or inhibit absorption of nutrients are known to be causes of sub-adequate nutrition. In such cases the surgeon or physician is well advised to combat the development of avitaminosis with

amounts safely above adult basic daily requirements, yet not wastefully in excess of the needs of the average patient for whom such multiple vitamin reinforcement is indicated. Herein lies its unique and impressive economy.

### **WHITE'S NEO MULTI-VI CAPSULES**

Each small capsule provides substantial amounts of eight vitamins—presenting all clinically established vitamins in

*Supplied in bottles of 25, 100, 500,  
1000 and 5000 capsules.*

Ethically promoted—not advertised to the laity. White Laboratories, Inc., Pharmaceutical Manufacturers, Newark 7, N. J.

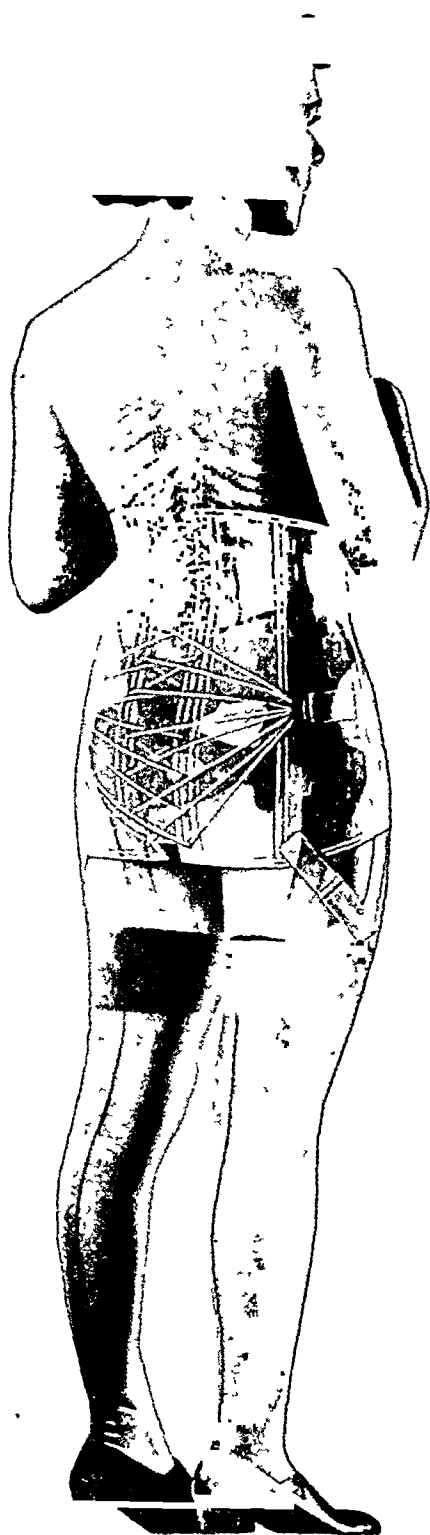
*White's* PRESCRIPTION *vitamins*



# ANATOMICAL SUPPORT

## for faulty

# BODY MECHANICS



*Patient of thin type of build —  
skeleton indrawn*

In conditions of faulty body mechanics, the nonuse of the abdominal muscles allows the pelvis to rotate downward and forward, bringing the sacrum up and back. There results an increased forward lumbar curve with the articular facets of the lumbar spine crowded together in the back. The dorsal spine curves backward with compression of the dorsal intervertebral discs and the cervical spine curves forward with the articular facets in this region closer together. Therefore, chronic strain of the muscles, ligaments and joints of the spine and pelvis occurs.

Camp Anatomical Supports have an adjustment by means of which their lower sections can be evenly and accurately brought about the major portion of the bony pelvis. When the pelvis is thus steadied, the patient can contract the abdominal muscles with ease and then with slight movement straighten the upper back.

*Relieving back strain and fatigue, due to faulty body mechanics is a feature of the Camp Support illustrated, and other types for Prenatal, Postnatal, Postoperative, Pendulous Abdomen, Visceroptosis, Nephroptosis, Hernia and Orthopedic conditions.*

# CAMP

ANATOMICAL SUPPORTS

S. H. CAMP & COMPANY  
Jackson, Michigan

*World's Largest Manufacturers of Scientific Supports*  
Offices in CHICAGO • NEW YORK  
WINDSOR, ONTARIO • LONDON, ENGLAND

IF A PATIENT  
WANTS INFORMATION  
REGARDING THE

# ADVANTAGES

## *of internal menstrual protection*

Primarily, the unique functional design of the Tampax vaginal tampon accounts for its numerous advantages—*anatomic, physiologic and psychologic.*

As one gynecologist<sup>1</sup> stated, at the conclusion of a study involving more than 2,300 cases of all types (many of whom employed Tampax over extended periods): "The patient does not even know that a tampon is present in the vagina if it is inserted sufficiently deep." He continued, "Many say they can forget that they are menstruating and so are without the disturbing annoyance they had every time they menstruated."

A general practitioner<sup>2</sup>, after studying 21 patients, remarked: "All patients were favorably impressed after using the tampons. Some said that they eliminated the chafing and itching caused by the usual external pads. Some said that

they eliminated a 'wet feeling' or 'unpleasant odor'. Others preferred them because they could indulge in sports with greater freedom."

And another specialist<sup>3</sup>, after observing 110 women (both single and married) who employed vaginal tampons throughout each period for from 1 to 2 years, reported that "because of the greater comfort experienced, 103 subjects preferred to continue to use the tampons through part or all of the menstrual period rather than to return to the use of the perineal pad alone."

Such opinions reflect the reactions of thousands of women in all walks of life who have experienced the advantages inherent in the Tampax method of menstrual hygiene.

- (1) West J Surg, Obst & Gyn, 51:150, 1943.  
(2) Clin Med & Surg, 46:327, 1939.  
(3) Am J Obst. & Gyn., 46:259, 1943.

# TAMPAX

ACCEPTED FOR ADVERTISING BY THE JOURNAL  
OF THE AMERICAN MEDICAL ASSOCIATION

TAMPAX INCORPORATED  
PALMER, MASSACHUSETTS

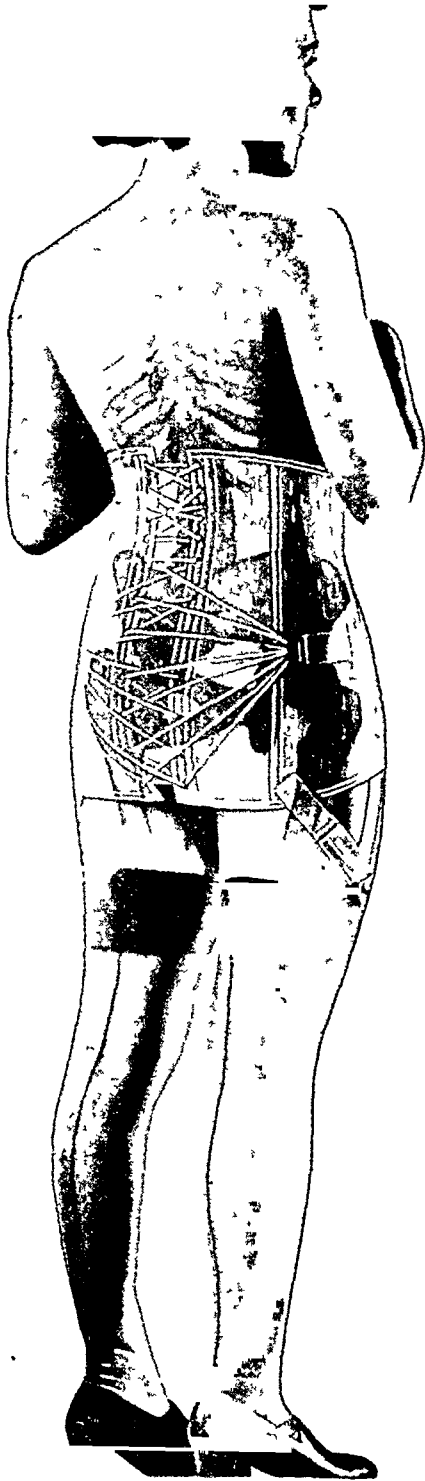
Please send me a professional supply  
of the three absorbencies of Tampax.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_

# ANATOMICAL SUPPORT

## for faulty

# BODY MECHANICS



In conditions of faulty body mechanics, the nonuse of the abdominal muscles allows the pelvis to rotate downward and forward, bringing the sacrum up and back. There results an increased forward lumbar curve with the articular facets of the lumbar spine crowded together in the back. The dorsal spine curves backward with compression of the dorsal intervertebral discs and the cervical spine curves forward with the articular facets in this region closer together. Therefore, chronic strain of the muscles, ligaments and joints of the spine and pelvis occurs.

Camp Anatomical Supports have an adjustment by means of which their lower sections can be evenly and accurately brought about the major portion of the bony pelvis. When the pelvis is thus steadied, the patient can contract the abdominal muscles with ease and then with slight movement straighten the upper back.

*Relieving back strain and fatigue, due to faulty body mechanics is a feature of the Camp Support illustrated, and other types for Prenatal, Postnatal, Postoperative, Pendulous Abdomen, Visceroptosis, Nephroptosis, Hernia and Orthopedic conditions.*

## CAMP

ANATOMICAL SUPPORTS

S. H. CAMP & COMPANY

Jackson, Michigan

*Patient of thin type of build —  
skeleton indrawn*

*World's Largest Manufacturers of Scientific Supports*  
Offices in CHICAGO • NEW YORK  
WINDSOR, ONTARIO • LONDON, ENGLAND

# B COMPLEX *plus* IRON *plus* LIVER

## *Design for Hematinic Therapy*

COMPOSITION: Liver residue. . . . . 3 gr.,  
Ferrous Sulphate, Exsiccated (U.S.P.) . . 3 gr.,  
Thiamine HCl . . 1 mg., Riboflavin . . 0.66 mg.,  
and Niacin . . . . 10 mg.

### ENDO GLOBIN

REG. U.S. PAT. OFF.

### *Tablets*

"Iron is of primary importance in the maintenance of body hemoglobin, yet so complex is the whole problem of utilization of iron by the body that the mere ingestion of sufficient quantities of iron is sometimes insufficient to prevent the development of the so called nutritional anemias. Other factors play an important role. Utilization of iron depends upon sufficient vitamin intake."

Endoglobin Tablets are efficient, economical and convenient to take. Available at prescription pharmacies in bottles of 40 and 100 tablets.

DOSAGE: One or two tablets, three times a day, after meals.

*Samples and literature to physicians upon request.*

### ENDO PRODUCTS INC.

RICHMOND HILL



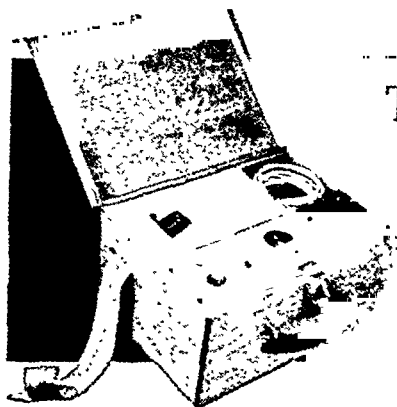
NEW YORK

\*Musser, John H., Internal Medicine, Lea and Febiger, Philadelphia, 3rd Edition, 1938, page 1048.

### ENDO GLOBIN

REG. U.S. PAT. OFF.

### *Tablets*

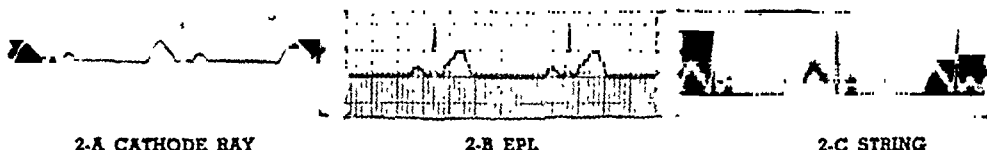


# The New EPL *Cardiotron*

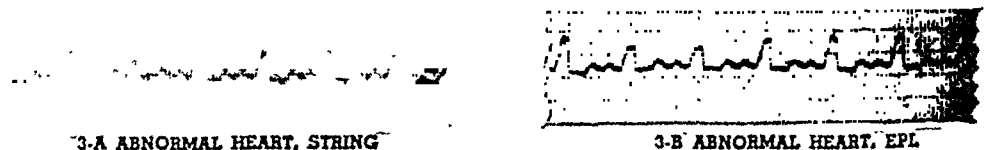
**A Portable, Direct-writing Electrocardiograph  
giving instantaneous standard readings**



We state that this device makes records which resemble those made by a photographic quality string galvanometer. Actually, in the case of certain types of wave forms, the fine stylus point on the EPL machine results in a much more accurate graphic copy of the electrical wave than is possible with the string machine. This is clearly illustrated in the reproduction of the chart made by a 7-cycle sine wave on the string machine, the EPL direct-writing machine, and the inertia-less cathode-ray oscilloscope (Figures 1-A, 1-B and 1-C). It is easily observable that the string does not accurately follow the peaks of the sine waves and adds a spike at the peak of each cycle. The true graph of this wave is shown on the cathode ray tube record; and it will be seen that the EPL direct-writer makes an identical graph.



This characteristic is additionally demonstrated in the reproduction above which shows the record made by an artificial heart device made by three methods. It may be noted that the shape of the "T" wave is slightly slurred in the case of the string, and that the EPL graph is precisely identical to the cathode ray record.



The two figures above represent records made on an abnormal heart, subject, male aged 52, by both string and EPL methods. The EPL graph is sharp and well defined.

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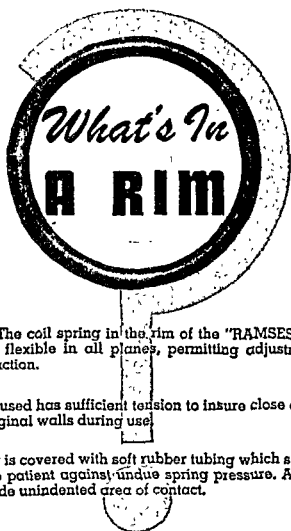
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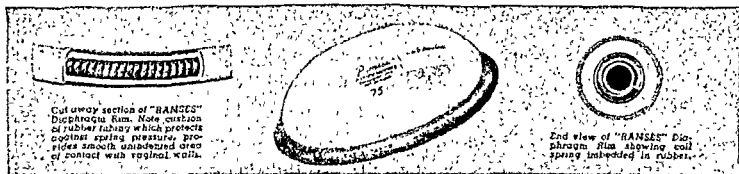




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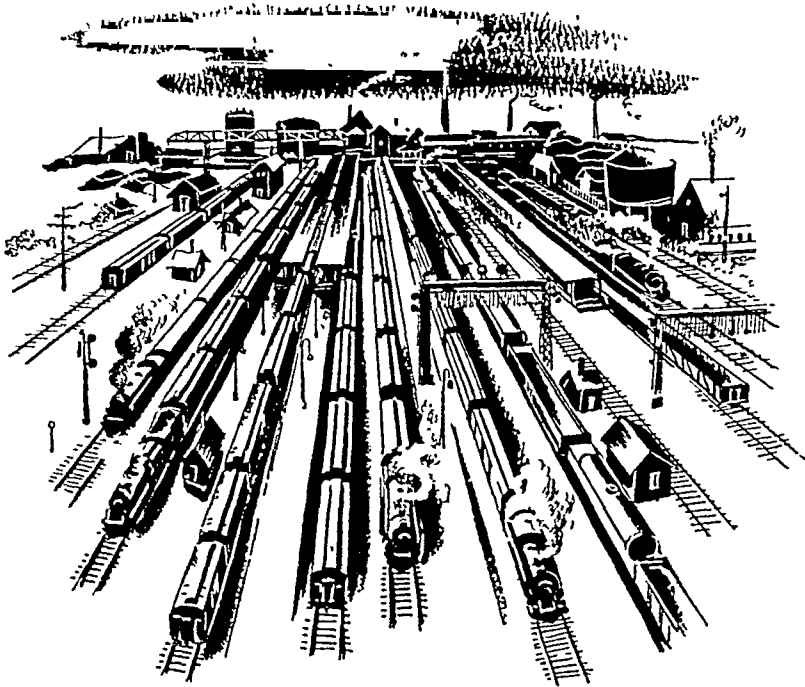
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# NEW YORK STATE JOURNAL OF MEDICINE

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## *Editorial*

### Insure Against Worry

If memory serves us as badly now as it has at times in the past, the following quotation is probably incorrect. But what of it?

"There was a doctor by name of Peck.

Fell down a well and broke his neck.

It served him right. He should have known

To treat the sick, and leave the well alone."

Medical care insurance, however, puts the doctor in his proper modern role of concern for the welfare of the apparently healthy before they become sick. If "health" insurance could assure health, which it cannot, many a doctor could take a vacation. If fire insurance could abolish fires, many a municipality could cut its budget. If life insurance could guarantee a state of living, things would be different from what they are.

Death and taxes are still with us, as the only certain events, in spite of every insurance policy that has ever been written. As Benjamin Franklin wrote to Leroy in 1789, "Our Constitution is in actual operation; everything appears to promise that it will last; but in this world nothing is certain but death and taxes."

Reverting to our text, doctors do not pro-

pose any longer to let the well alone. They have for years preached and fought for preventive medicine; they have preached and fought for really competent health departments staffed by properly trained doctors of public health; they have urged and helped to formulate laws for the enforcement of effective public health measures; they have sought by every means that human ingenuity and constructive imagination could devise to eradicate disease, to assist nature to function properly, to prolong life. While they have been principally concerned with the sick as the immediate necessity, they have not left the well alone. They have been thinking about the well, the healthy, and they have thought, among other thoughts: with all that can be done, people still become ill. Is there anything we can do that we haven't done before? Well, yes, there is.

We may not be able to keep all people well with the best of intentions and with all our knowledge, but we could possibly make some aspects of illness less disagreeable to think about or to experience. Maybe we could insure the cost of being sick, or, any-

how, part of the cost. That would knock Old Man Worry for a loop, maybe for two loops. Yes, doctors sometimes *think* in that language though they may speak to people in the office about echinococcus cysts, teleangiectic blood vessels, or avitaminosis.

"Yes, but—" said the yes-buffers. "You will break your ———<sup>1</sup> necks if you don't let the well alone."

<sup>1</sup> Since this JOURNAL enters the homes of respectable physicians copy has been censored.—*Editor*

## The World Do Move

From the *J.A.M.A.*<sup>1</sup> we excerpt the following editorial, in part:

"At its annual meeting in New York, October 4, the Governing Council of the American Public Health Association adopted a report favoring in effect a Federal plan of compulsory health insurance. The text of the adopted report appears elsewhere in this issue (page 441).\* This report, first prepared by a subcommittee, was approved after several amendments by the Association's Committee on Administrative Practice. The proposed medical service would be supported by social insurance, supplemented by general taxation, or by general taxation alone. . . ."

So far, nothing new has been added. And the fact that the A.P.H.A. should express itself on this question seems to us in no way remarkable. That is its right and privilege as a free American institution.

"The ratification of the report as amended came after extended debate in which there was opposition to the adoption and publication of the report as a stated policy of the Association."

We urge our readers to familiarize themselves with the full text of the report as published, because of its probable future significance to American medicine:

The *J.A.M.A.* says further:

"Those who opposed pointed out (a) that the administration of public health in the United States was by no means so universal or so generally adequate that public health departments in general were ready for this step, (b) that before the Association placed itself publicly on record in the terms of this report there should be consultation with the most interested professional groups, particularly the American Medical Association and the American Dental Association, and (c) that the publication of the subcommittee report, its approval by the

"What of it?" replied the non-yes-buffers, "if that will do any good."

"What the ———<sup>1</sup> do you know about the insurance business?"

"Very little, since we are doctors, but we can always ask, can't we? And if this thing can be done, we'll do it."

And there the matter stands. Insurance Against Worry, if you like. Backed by physicians. No cure, not even treatment for the ills that flesh is heir to, but an ever-present help in time of trouble. Insure now against Worry.

Committee on Administrative Practice, and the call for adoption in the Governing Council occurred within less than thirty days' elapsed time, although the subcommittee had been working on the report for a year."

Points *a*, *b*, and *c* when analyzed seem to indicate a tendency of the whole Council toward hasty action, the reason for which does not appear. The opposition certainly has raised questions which seem to demand careful consideration. Point *b* especially deserves, it would appear, more attention than it seems to have received. As far as we are aware, neither the A.M.A. nor the A.D.A. has indicated that it would necessarily go along with such a statement of policy, but we could be mistaken.

"The motion to adopt the report was made at the October 2 meeting of the Governing Council and was extensively debated at that time. Action was postponed until the October 4 meeting. At that time an amendment was offered to the motion to adopt. This amendment called for the Governing Council to receive this portion of the report of the Committee on Administrative Practice and to refer it to the Executive Board of the American Public Health Association with instructions to confer with the Board of Trustees of the American Medical Association and with the American Dental Association in an attempt to arrive at a statement which these three great professional groups could support. The amendment was lost by a standing vote approximately three-to-one after a voice vote had left the chair in doubt. The Governing Council then proceeded to vote on a motion to adopt the report; this vote was 49, Aye, and 14, No. The opposition to the adoption of the report was led by Drs. Walter A. Bierring, past president of the American Medical Association, Haven Emerson, and W. W. Bauer."

The proposal to confer seems such an obvious and reasonable one, so intimately related

<sup>1</sup> *J.A.M.A.*, Vol. 126, No. 7, Oct. 14, 1944, p. 434.

\* *Ibid.*

to public policy, good public relations, and to the public interest that one questions why it was not adopted. Sinister suspicions could and probably will be aroused by an action which could be merely over-hasty. We read further:

"Now what is the group that adopted this report? Of the 7,493 members of the American Public Health Association, 1,571 are Fellows. Only Fellows have a right to vote for governing councilors; the vote is conducted by ballot given to each Fellow when he registers at the meeting; Fellows not in attendance do not have a vote. The Governing Council consists of approximately one hundred members, of whom thirty are elected by vote of the Fellows, ten each year for three-year terms; the rest of the members of the Governing Council hold membership by virtue of being section officers or representatives of affiliated (mostly state) public health associations. Members of the Association other than Fellows can vote only on section affairs. The report on compulsory health insurance represents, therefore, the action of the subcommittee which prepared it, the Committee on Administrative Practice which approved it, and the forty-nine members of the Governing Council who voted in its favor."

Perhaps this small group of men really represents the attitude of the Association; perhaps not. It is not for us to say. But the report itself is public property, one more straw in the turbulent wind of destiny. And the method of its adoption can be scrutinized by anyone. Says the *J.A.M.A.*,

"Here is not a democratic practice in action; here is a shrewdly manipulated performance by full-time public officials, economists, bureaucrats. Most of the names of those on the subcommittee are those of men long committed to Federal compulsory sickness insurance and to Federal control of all matters in the health field.

"The American Public Health Association has an obvious right to express itself on any subject related to the public health. The rejection by the majority group of the proposal for consultation with medical and dental leaders indicates the attitude that may be expected of them if they should have control of the Washington bureaucracy that would dominate American medicine should their ideas become effective."

This observation seems somewhat justified by the reported facts and the procedure, but a person or group is often judged by the *last* thing he does not on the complete record. Action taken, as in this instance, seemingly in haste and in apparent disregard of good public and professional relations, may be repented at leisure. Only time will tell.

"Perhaps this step in which these men had leadership will be useful in serving notice once more on the medical, dental, nursing, pharmaceutical, and other professional groups as to the nature of the political manipulators in the fields of social security and public health whom the medical professions will be forced to combat."

Maybe so, maybe not. Education is a slow and costly process. Meanwhile, the world do move—and we with it.

## Respiratory Flora

Of all human ills the most frequent and widespread is the respiratory infection. Not only is it a potent cause of absenteeism, often at critical times and in critical situations, but it also may pave the way for secondary invaders, with serious sequelae. It is therefore of fundamental importance to learn how the respiratory pathogens gain entrance into the nasal and oral cavities. For such studies the newborn baby, who presumably enters the world with a sterile respiratory tract, is the ideal subject.

In corroboration of previous studies<sup>1</sup> recent investigations<sup>2</sup> show that nasopharyngeal cultures of newborn infants, taken up to sixteen hours after birth, were sterile in 80 per cent of babies. Between twenty-four and forty-eight hours after birth the oral cavities of about 50 per cent of babies remained sterile. After two to four days of age there no longer were bacteria-free respiratory tracts. Of particular interest

was the almost complete absence of such pathogens as the beta hemolytic streptococcus, pneumococcus, Friedländer's bacillus, and the influenza group of bacilli. Constant components of the respiratory flora were certain types of non-hemolytic streptococci and hemolytic staphylococcus aureus. Ultraviolet radiation and air conditioning simply delay the acquisition of the initial respiratory flora, for after two to four days there was no genuine difference in the flora in the noses and throats of infants in wards treated with irradiation and air conditioning from those not so treated. Clear evidence was presented, in the form of positive cultures, that the throat normally becomes infected before the nasopharynx, for the latter may remain sterile four days or longer after birth.

Since it has been demonstrated that the air of irradiated and air-conditioned nurseries contains few organisms as compared with the air of

untreated nurseries, it was important to ascertain why equality of infection was obtained in all nurseries in two days. Bacteriologic studies of the parturient canal revealed that this tract plays a minor role in the infection of the mouth or nose of the newborn baby.<sup>2,3</sup> In nursing infants the breast and other cutaneous areas of the mother which are necessarily in intimate contact with the baby's mouth and nose sometimes played a demonstrable role in the initial implantation of respiratory pathogens. The most common source, however, of the initial respiratory flora was proved to be the respiratory tract and fingers of those who were in most intimate contact with the baby. Cultures from fingers of nurses and from throats of nurses and doctors not infrequently revealed the very same type of organism with which the baby had been contaminated, generally a hemolytic staphylococcus from fingers, or a streptococcus from throats.

We gather from this meticulous bacteriologic study that several factors account for the respiratory flora. Transmission by air contamination can be minimized by ultraviolet radiation

with or without air conditioning. The most important contaminating agents are the fingers and the respiratory passages of human contact. Wearing face masks is only partially effective. Observance of aseptic technic is still of the utmost importance in attaining cleanliness of the hands. An important adjuvant measure is the reduction of contact between the infected and noninfected, and limitation of traffic in the nursery or sick room, for frequent handling not only contaminates the air but increases the opportunity of direct transmission from infected fingers and oral cavities. While such contact can never be completely prevented, decrease to the irreducible minimum, in conjunction with measures to lessen air infection and strict aseptic technic for hands and faces, give promise to substantially reduce the incidence of respiratory infections when, perforce, there must be congregations.

<sup>1</sup> Kneeland, Y., Jr.: *J. Expert Med.* 51: 617 (April) 1930.  
<sup>2</sup> Torrey, J. C., and Reese, M. K.: *Am. J. Dis. Child.* 67: 89 (Feb.) 1944.  
<sup>3</sup> Weinstein, L.: *Yale J. Biol. & Med.* 10: 247 (Jan.) 1933.

Competition for Prize Essays

The Merrit H. Cash Prize and the Lucien Howe Prize will be open for competition at the next Annual Meeting of the Medical Society of the State of New York.

The Lucien Howe Prize of \$100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The Merrit H. Cash Prize of \$100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York, who at the time of the competition are residents of New York State.

The following conditions must be observed:

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the Committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York "to be published as it may direct."

All essays must be presented not later than February 1, 1945, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 292 Madison Avenue, New York 17, New York.

CHAS. GORDON HEYD, M.D., *Chairman*  
Committee on Prize Essays

# THE WAR AND OXYGEN THERAPY

JOHN H. EVANS, M D, Buffalo

ONE hundred per cent oxygen therapy is a valuable aid in the treatment of many diseases and conditions which confront the medical officers of our armed forces

It can be given by inhalation, subcutaneously, and injected into joints and other cavities, such as the gastrointestinal tract, pleural sac, spinal canal, and abdominal cavity. It can also be given intravenously either as a gas or by the use of dilute hydrogen peroxide, which liberates nascent oxygen when it comes in contact with the blood. By the use of these various forms of administration it can reach pathologic processes in all parts of the body.

I shall confine this paper to inhalation and subcutaneous oxygen therapy and to their wartime uses.

Although it is well known that oxygen is essential to life and that all the vital functions are impaired in direct proportion to the degree of oxygen deficiency, the medical profession has never been greatly interested in oxygen therapy. Perhaps the chief reason for this is that oxygen has been a failure in the treatment of anoxemia. The 40 to 60 per cent oxygen, which is the dosage generally employed, fails to control anoxemia except in the milder types. When the clinician repeatedly observes that his patients are still deeply cyanotic in spite of oxygen therapy, his interest in oxygen as a therapeutic agent soon ebbs. The therapy has been considered so unimportant that its administration has been left chiefly to the fire departments, the commercial firms, and the technicians. It has come to be regarded as a therapy which is outside the realm of medical practice.

I predict that at some future date the administration of oxygen will be taken more seriously and that oxygen therapy will occupy an important place in therapeutics.

## Inhalation Oxygen Therapy

Among the wartime indications for inhalation oxygen therapy are pneumonia, shock, gas poisoning, and extensive burns. It is apparently helpful, especially when combined with positive pressure, in preventing postoperative pulmonary complications.

*Conquest of Anoxemia*—As anoxemia is usually one of the most distressing and dangerous complications of the diseases just mentioned, as

well as of other diseases and conditions, such as pulmonary edema, atelectasis, pulmonary embolism, and circulatory failure, it is most important that it be controlled. That this is not generally being done at the present time is due to the fact that oxygen is given in too weak concentrations. The reason that these weak concentrations are employed is that the oxygen tolerance of healthy animals has been substituted for oxygen dosage. Oxygen dosage for the anoxic patient is that concentration of oxygen which will restore the arterial blood oxygen to its normal level. This dosage will vary with the degree of oxygen deficiency. The oxygen tolerance of a healthy animal is the maximum concentration of oxygen which can be inhaled for a long period of time without harmful effects. As the arterial blood oxygen of a healthy animal is at its normal level, oxygen tolerance represents the percentage of oxygen which can safely be inhaled in excess of normal.

In order to calculate oxygen dosage there must be an oxygen deficiency upon which to base the dosage. No such deficiency exists in a healthy animal. The anoxic animal can safely inhale higher concentrations of oxygen than an animal whose arterial blood oxygen is at its normal level.

We have found that anoxic dogs and human beings can inhale 100 per cent oxygen without harmful effects for as long as the cause of the anoxemia exists. They can inhale that concentration of oxygen which is required to restore the arterial blood oxygen to its normal level, plus that concentration which can safely be inhaled when the blood oxygen is at its normal level.

Barach<sup>1</sup> has calculated the oxygen tolerance of healthy rabbits to be 60 per cent, which he found they could safely inhale for as long as four months.

If we assume that the oxygen tolerance of a human being is at least as great as that of a rabbit, it can be shown mathematically that a patient who has only a slight lowering of the arterial blood oxygen can safely inhale 100 per cent oxygen. In such cases 40 per cent oxygen is all that will be required to restore the arterial blood oxygen to its normal level. When this has been accomplished the patient still has an oxygen tolerance of 60 per cent. Adding the 40 and the 60, we have 100 per cent.

That continuous 100 per cent oxygen can safely be given even to patients with these mild types of anoxemia has been substantiated in a large num-

<sup>1</sup>Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10 1944.

ber of our cases. The only interruption in the treatment was for giving medicine or nourishment.

In very severe cases of anoxemia, such as exist in pneumonia when nearly all the lung tissue is involved, even 100 per cent oxygen will fail to abolish the cyanosis.

Perhaps the time will come when hospitals will be equipped with pressure chambers in which concentrations of oxygen above 100 per cent will be made available for the treatment of these cases. Until that time comes, the injection of large amounts of oxygen under the skin should be tried. In spite of the fact that there is no explanation as to why the comparatively small amount absorbed in a given time should relieve the symptoms of anoxemia, the clinical evidence is convincing. If the peripheral circulation is too much depressed the procedure may not be effective.

The objective of oxygen therapy in the treatment of anoxemia should be to restore the arterial blood oxygen to its normal level and to keep it there; as the return of anoxemia in seriously ill patients, even for a short time, may be fatal.

About five years ago two proposals for a change in oxygen dosage were made, in both of which 100 per cent oxygen was to be used part of the time. These proposals, as those for 40 to 60 per cent oxygen, are based on the tolerance of healthy animals to oxygen.

One proposal<sup>2</sup> is to give 100 per cent oxygen for the first two days and 50 to 70 per cent oxygen thereafter, and the second<sup>3</sup> is to give 100 per cent oxygen for the first two days, after which 100 per cent oxygen is to be given only half time and 60 per cent oxygen the other half.

These proposals ignore the oxygen requirements of patient suffering from severe anoxemia, in which the cyanosis will return as soon as the oxygen concentration is reduced to 50 or 70 per cent.

In 1925 I began giving continuous 80 to 100 per cent oxygen to cyanotic pneumonia patients. The report on these early cases was published in 1927.<sup>4</sup> Since then my partner, Dr. C. J. Durshodwe, and I have given continuous 100 per cent oxygen to over 800 patients who were suffering from anoxemia complicating pneumonia, cardiac failure, asthma, and other diseases. During the past several years we have reported our results from time to time.<sup>5</sup>

However, up to five years ago the use of 100 per cent oxygen was vigorously opposed by all authorities on oxygen therapy on the ground that pure oxygen was a poisonous and irritating gas, as evidenced by the fatal pneumonia it produced in healthy animals after a period of a few days. Now, some of these objectors are so enthusiastic over the good results obtained by its

use that they avoid mentioning in their reports that 100 per cent oxygen had previously been employed or advocated.

I am grateful to Barach, who is a believer in justice and fair play, for the publication of the following statement: "The proposal that very high concentrations of oxygen, 95 to 100 per cent, be used in the treatment of pneumonia and cardiac disease originated with Evans, who reported that the clinical symptoms of anoxemia were often not relieved until these high concentrations were employed."<sup>6</sup>

I recently wrote to Barach inquiring about his present views on oxygen dosage and, under date of April 20, 1944, received the following reply: "It appears to be true that your original observations on giving 100 per cent oxygen by means of a mask does not appear to be toxic to human beings over a period of two to four days. This may be because there is some interruption of oxygen treatment when the patient is fed or given fluids. In all events, I would agree that you are right in urging these high concentrations in conditions such as shock, severe hemorrhage, and any acute cardiorespiratory illness in which severe anoxia is present."

"One must remember that the Germans who were in 100 per cent oxygen in a chamber did become sick at the end of two or three days. I think it is generally true that it would be desirable to keep the oxygen concentration of the arterial blood as near normal as possible."

I am glad that Barach's present views and mine coincide on some of the important points regarding oxygen dosage. However, there are still points upon which we disagree.

Barach implies that 100 per cent oxygen has toxic effects when administered to anoxemic patients for more than two to four days. I agree that this would be the case if the patients were not anoxemic. If I interpret his statements correctly, he is of the opinion that if a given dosage of oxygen would be toxic to a healthy person, it would also be toxic to an anoxemic patient. My disagreement with him on this point is not based on theory but upon clinical observations in hundreds of cases in which 100 per cent oxygen has been given continuously for from seven to twenty-eight days. In none of the cases was there any evidence that the oxygen had toxic effect. On the other hand, there was abundant proof that the oxygen was as beneficial on the seventh, tenth, or twenty-eighth day as it was during the first two to four days.

Unlike all other therapies, in oxygen therapy the hand of the clinician is restrained before the desired results are obtained. Take, for example, insulin, which, like oxygen, is a vital constituent of the body. Although healthy rabbits have

been thrown into fatal convulsions with 10 to 12 units of insulin, the dosage in the treatment of diabetes is not limited by these figures but is determined by the degree of insulin deficiency. That the required dosage would be fatal if given to healthy individuals is of no interest whatever to the clinician.

### Positive Pressure

We have administered 100 per cent oxygen with positive pressure to over 1,400 patients. The pressure is regulated by the amount of tension placed on the expiratory valve, through which the expired oxygen escapes. The tension is increased or decreased by turning a setscrew to the end of which is attached a coil spring.

In the treatment of pulmonary edema, atelectasis, and gas poisoning the tension is increased above that ordinarily used. The spring is adjusted to produce an estimated water pressure of 4 to 6 cm. during exhalation. In severe cases of pulmonary edema this has been temporarily further increased, but not sufficiently to interfere with pulmonary circulation.

We are indebted to Barach, Martin, and Eckman<sup>7</sup> for their investigation, both by animal experimentation and clinical application, for the purpose of determining why positive pressure is beneficial in these cases. As we have used positive pressure in all but a few of our cases, it is impossible to tell how much of the beneficial results should be credited to 100 per cent oxygen and how much to positive pressure.

**Pneumonia**—The sulfa drugs, while an advance in the treatment of pneumonia, have their limitations, as they have been found ineffectual for virus and atypical pneumonia and are contraindicated for those patients who have previously acquired a sensitivity to these drugs.

Early this year the Pneumonia Advisory Committee of New York City<sup>8</sup> made the following report: "The number of reported deaths from primary pneumonia is larger than it has been for some years, and is particularly striking since it is occurring in an era when sulfonamide drugs are available. It is also high in comparison with deaths in pneumonia reported in many of the years of the presulfonamide era."

We have found that 100 per cent oxygen therapy is very beneficial in the treatment of pneumonia, regardless of the cause. The importance of employing it as early as possible even when there is no cyanosis, cannot be overemphasized. In a series of 100 cases in which oxygen therapy was begun on the first day of the disease, including various types of pneumonia, the death rate was only 6 per cent. In two of these cases continuous 100 per cent oxygen was given in spite of the fact that there was no cyanosis present at

any time. Both recovered, the pneumonia in one instance terminating in three and a half days, and in four and a half days in the second. In the other cases 100 per cent oxygen was given for from one-third to one-half of the time if there was no cyanosis, and continuously if there was.

In our report<sup>9</sup> on 409 pneumonia patients in 1935 we showed that the death rate mounted in proportion to the delay in starting oxygen therapy.

As it takes from fourteen to twenty-four hours or longer before the efficacy of the sulfa drugs can be determined, we believe that 100 per cent oxygen therapy, given for at least one-half of the time, should be started as soon as the diagnosis of pneumonia is made.

Although 100 per cent oxygen therapy in the treatment of pneumonia entails increased expense, it has the advantage over the sulfa drugs of never producing a sensitivity or any deleterious or fatal side-effects.

**Shock**—Shock, whether due to hemorrhage, anesthesia, surgical manipulations, extensive burns, or other causes, is a condition in which 100 per cent oxygen is urgently needed.

Probably the terminal cause of death in all fatal cases is anoxemia.

In shock the burden of carrying oxygen is thrown chiefly on the plasma, and when 100 per cent oxygen is given the oxygen content of the plasma is increased fivefold.

The oxygen should be administered until enough blood has been given to carry on the function of oxygenation. In shock the peripheral circulation is so greatly reduced that the deficiency of oxygen is not indicated by cyanosis. Pallor, instead, is usually present.

**Gas Poisoning**—In cases of gas poisoning the most urgent first aid treatment is 100 per cent oxygen, since the gases, especially carbon monoxide, interfere with the oxygen-absorbing power of the red cells, producing an anoxemia. The irritant gases also aid in the production of anoxemia by damaging the mucosa of the respiratory tract. More oxygen will be absorbed by the blood if positive pressure is used in these cases. The tendency is to discontinue the use of oxygen prematurely. In severe cases it should be given for twenty minutes each hour for two or three days following the initial treatment in order to prevent pulmonary complications. Sleep, however, should not be interfered with.

**Extensive Burns**—We have found 100 per cent oxygen beneficial in the treatment of extensive burns. The toxicity is reduced and the healing is enhanced.

The following is a review of our first case, which has previously been reported.<sup>10</sup>



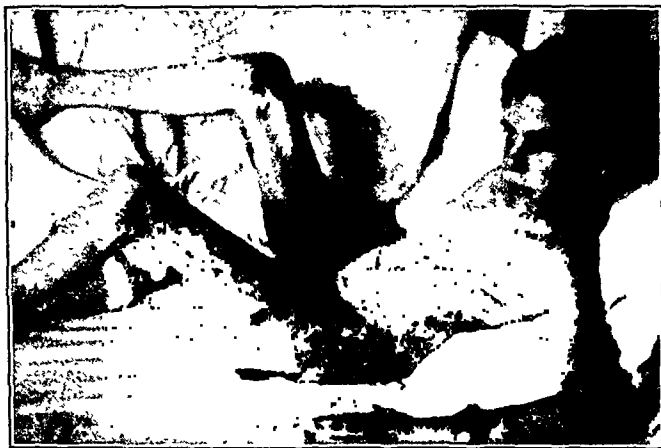


FIG. 1. Case 1. Shows the amount of healing after several weeks' treatment by oxygen inhalation.

*Case 1.*—In 1925, a 9-year-old girl, in an outing flannel nightgown, was standing before an electric heater when her gown caught fire. More than two-thirds of her body was burned, third degree, leaving no islands of skin in the burned areas. Ten days later, when she was in a very serious condition, with temperature ranging from 101 to 105 F., and pulse rate from 120 to 150, 100 per cent oxygen was started. Her mental condition was sluggish and she took very little nourishment. Soon after the oxygen therapy was begun her mental condition returned to normal, her appetite improved, and the cyanotic color of the burned areas changed to pink. The advance of new skin began within twenty-four hours and was definitely and continuously progressive when and only when oxygen was given. The oxygen was discontinued for twelve days to ascertain whether or not the new skin would continue to grow without the oxygen. The growth of skin immediately slackened until it practically ceased. However, as soon as oxygen therapy was resumed the granulation tissue again became pink and the new skin began to advance. After seven months the entire burned area was covered with new skin. No skin grafting was necessary; however, the child was not able to straighten out her right leg because of scar tissue. The oxygen was continued, twenty minutes each hour, for another month, at which time the patient was able to straighten her leg. (See Figs. 1, 2, and 3\*.)

*Postoperative Use of Oxygen.*—We gave 100 per cent oxygen, with positive pressure, to 125 patients following major surgical procedures. Of these 78 were upper belly operations, chiefly cholecystectomies. The anesthesia was nitrous oxide-oxygen and ether. Many of these patients had either chronic or acute respiratory infections, in which it was feared postoperative pulmonary complications might develop. The oxy-

gen was given immediately after operation for from four to six hours and twenty minutes each hour thereafter for two days. There were no pulmonary complications in this series, and we believe that the oxygen was responsible for the good record, although it could be argued that the results would have been the same had no oxygen been used. We believe that the oxygen not only prevented pulmonary complications in some of the cases, but that it added to the comfort and well-being of all the patients. Coughing, which is so distressing to patients after upper belly surgery, was almost entirely absent.

### Subcutaneous Oxygen

The term "subcutaneous oxygen" is rather misleading, since it gives the impression that the oxygen stays in the subcutaneous tissue. This is true if only a small amount of oxygen is injected, but when enough is given x-rays reveal that it reaches bony structure and permeates the muscles and other intervening tissues. When given in sufficient amount around joints it apparently enters the joint cavity, as evidenced by the conversion of thick pus within the joint cavity to a thin amber-colored fluid.

The idea of injecting oxygen into or near diseased tissues is not new. Bainbridge<sup>11</sup> states that Beddoes, as early as 1799, employed oxygen for the cure of ulcers; that in 1861 Manière and Gimbernath used injections of sterilized air in the treatment of hydrocele; and that in 1861 Damarguay and his coworkers announced the cure by oxygen injection of a case of senile gangrene. Rost<sup>12</sup> in 1921 reported excellent results with subcutaneous oxygen in cases of psoas abscesses, pyemic abscesses, and infections of joints.

In 1928 Kirk<sup>13</sup> employed subcutaneous oxygen for the treatment of burns, scalds, and acute

\* Figs. 1, 2, and 3 are reprinted, with permission, from *The Medical Journal and Record*, April 4, 1928.



FIG. 2. Case 1. Shows progress as compared with a photograph of the patient taken on May 15, 1926, during six weeks of oxygen therapy.

periostitis. Many other investigators have reported favorably on the use of oxygen by this method.<sup>14</sup>

The results of my own investigation, which began in 1935, of injecting oxygen into or near the localized pathologic process has been partially reported in previous papers.<sup>16</sup>

These results coincide with those obtained by others, and apparently cover diseases and conditions not previously investigated.

It is interesting to note that in both acute and chronic inflammatory conditions the oxygen is reduced from normal. The normal oxygen pressures in healthy tissues vary between 20 and 40 mm. Hg and that of carbon dioxide between 40 and 60 mm. Hg. Campbell and Poulton<sup>16</sup> state that "in infected tissues with areas of necrosis the carbon dioxide pressure is much increased while the oxygen pressure is very low indeed, falling almost to zero." They tabulate the findings of several investigators who find that in pyopneumothorax the oxygen pressure is 0-2; in tuberculous pleurisy 0-2; in pneumothorax with exudate 0-6; and in subcutaneous cellulitis 2-3. It is apparent from these findings that oxygen

therapy is indicated in the treatment of these diseases.

Some of the wartime diseases and conditions for which subcutaneous oxygen is beneficial are local infections, arthritis in its acute stage, ringworm, burns, relief of pain following dislocations and sprains, and for promoting the healing of wounds.

The beneficial effects which result from the injection of oxygen into diseased tissues can be only partially accounted for by the correction of the local anoxemia.

For example, in acute inflammatory conditions we get relief of pain and a disappearance of local fever and redness and a reduction in the swelling and tenderness within twenty-four hours. We can only speculate as to why these results are produced. It probably works mechanically and chemically.

Mechanically it may act as follows: (1) opens up compressed lymph channels and provides better drainage; (2) serves as a buffer for inflamed tissues, thus relieving pain; (3) improves local circulation of blood.

Chemically, the excess oxygen apparently acts



FIG. 3. Case 1. Shows burns completely healed after eight months of oxygen therapy.

as follows: (1) oxidizes toxins; (2) kills the invading organisms.

**Acute Infections.**—The results obtained with subcutaneous oxygen in the treatment of acute local infections have been so uniform that they can be predicted in advance. However, I have not used it in cases of tuberculosis.

**Case 2.**—A 60-year-old steel worker had an abscess over his right knee which did not involve the joint. He was confined to bed. The knee was swollen, red, tender, and very painful. Oxygen was injected into the leg and thigh and was massaged toward the knee. Some oxygen entered the abscess cavity, as indicated by the percussion note. The pain was lessened as soon as the oxygen was injected and disappeared entirely on the following day, at which time the redness and increased local temperature had also disappeared. There was still some tenderness on pressure. At this time 20 cc. of pus were withdrawn through a needle and the oxygen was given as before. Two more such injections were given. The patient returned to work six days after the first treatment.

**Case 3.**—A resident surgeon, 28 years of age, received a stab wound between the first and second knuckles of the right hand, while assisting in a cleft-palate operation. Twenty-four hours later his hand was swollen, red, and painful, the pain extending up the arm to the axilla. He was unable to bend the middle finger and any attempt to do so caused severe pain. Oxygen was injected into the hand, forearm, and arm. The next day the redness and pain had disappeared and there was less edema. Forty-eight hours after the injection of oxygen all traces of the inflammation had vanished and full function had returned to the finger. There was some tenderness which persisted for a month. He took 1 Gm. of sulfadiazine every four hours for thirty-two hours because he was skeptical of the effect of the oxygen, which I had pictured to him in advance. Only one injection of oxygen was given.

**Case 4.**—A 76-year-old woman had a discharging abscess on the top of her head of three weeks' duration, which required daily dressings. Oxygen was injected beneath the scalp on two successive days, after which the drainage stopped.

**Cases 5, 6, and 7.**—These patients had inflamed and painful hemorrhoids, in one case of which there was a discharge of pus. In 2 cases oxygen was injected daily for three days, and for two days in the other, after which the inflammatory phase and tenderness disappeared and there was no further discharge of pus. The oxygen was not injected directly into the hemorrhoids, but into the buttock, and was massaged toward the midline. Partial relief of pain was experienced immediately in the three cases.

**Case 8.**—A 40-year-old physician was suffering from a cellulitis of both legs and feet following an x-ray burn inflicted during treatment of ringworm of the feet. The doctor suggested that only one leg and foot be injected and the other used as a control, which was done. The following day the swelling in the leg and foot which had been injected with

oxygen was reduced and the pain had disappeared. There was no change in the swelling or pain in the other leg and foot. Then the oxygen was injected into the control leg and foot and the results were the same as on the other side.

Neuritis and myositis, like other acute inflammatory infections, subside in the presence of oxygen.

**Arthritis.**—As chronic arthritis is not a subject of special interest in wartime medicine, I will report only on the acute types.

**Case 9.**—The patient was a man of 58. Two days after the start of a severe maxillary sinus infection his right hand became swollen, red, tender, and painful. For four days oxygen was injected daily into healthy areas to see if it would have any effect on the arthritis, which it did not. Then oxygen was injected into the right forearm and hand. The next day the swelling was reduced, the pain had disappeared, and there was much less tenderness. The one treatment was all that was required, although there was some tenderness when the hand was squeezed for the following ten days.

**Case 10.**—A 28-year-old woman had arthritis involving both hands and wrists and both feet and ankles. There was swelling, redness, tenderness, and pain. The arthritis was a complication of an acute follicular tonsillitis. Twenty-four hours after the first injection of oxygen the acute symptoms of the arthritis had subsided. Although another injection was given on the second day, it was probably unnecessary. There was no return of the arthritis. A tonsillectomy was done later.

**Case 11.**—A 61-year-old man had acute atrophic arthritis of the right knee, which was hot, red, and painful. It lasted two days. There was immediate relief of pain following the injection of oxygen and after four daily treatments the knee appeared normal, with full function.

**Case 12.**—The patient was a 41-year-old woman whose right hand was acutely inflamed for twenty-four hours. She had previously been successfully treated with subcutaneous oxygen for atrophic arthritis of the knees of eighteen months' duration. After one injection of oxygen the arthritis of the hand disappeared and has not returned.

**Burns.**—While our experience with subcutaneous oxygen in the treatment of burns is somewhat limited, it seems that the growth of new skin advances much more rapidly when oxygen is injected into the burned and adjacent areas. In one case of severe burns subcutaneous oxygen was combined with inhalation oxygen with gratifying results.

As oxygen apparently has the effect of neutralizing toxins, I believe it possible that, if oxygen were injected immediately into burned areas, constitutional effects might be lessened or aborted. I cite the following experiment, merely for the purpose of stimulating further investigation, and not with the idea that the re-

sults obtained are significant. They are only suggestive, and may or may not be duplicated in further experiments. Two large white rabbits of the same litter that were kept in the same cage were anesthetized and the skin over the abdomen was burned with a hot iron. Under the burned area of one rabbit a layer of oxygen was maintained for a period of six weeks, the injections being given every other day. This rabbit, although its burn happened to be more extensive than that which was inflicted on the other rabbit, did not at any time appear sick, there was no loss of appetite, and there was a progressive increase in weight. No oxygen was injected into the other rabbit. The following day it began to appear sick, the eyes looked dull, and the appetite began to fail. During the following six weeks there was a progressive loss of weight until there was barely skin and bones left.

**Wounds.**—I am convinced that subcutaneous oxygen hastens the healing of open wounds. My observations have been that it keeps the wound more sterile, lessens the discharge, and improves the blood supply. In order to prove that my deductions are correct, exacting animal experimentation would be necessary.

Perhaps the most convincing clinical evidence I can offer is the healing of long-standing varicose ulcers of the leg by the injection of oxygen. The following is a report of one of our cases:

**Case 13.**—A 35-year-old pharmacist, who was on his feet almost every day for twelve hours, had a varicose ulcer on each leg, the size of a half a dollar, of two years' duration. Subcutaneous oxygen was given three times weekly for six weeks, at which time the ulcers were healed. He did not stop work during the treatment. After the first few treatments the odor, which had been quite marked, disappeared and the discharge gradually lessened.

**Ringworm.**—I understand that many people in our armed forces are suffering from ringworm of the severe type. My experience in the treatment of this disease may be of interest. I do not claim that oxygen therapy is a cure, but from my observations it is a great help in clearing up bloody discharge and in healing of ulcerations. The results have been uniform in the few cases treated.

**Case 14.**—A girl, 16 years old, had ringworm involving the right foot of six months' duration, which was getting worse in spite of the usual remedies. There was a bloody discharge between the toes. After the first few injections of oxygen and the bloody discharge stopped after the third. The small ulcer healed after the first few injections and the one on the sole of the foot after six weeks.

The injections were given twice weekly.

**Dislocations and Sprains.**—Subcutaneous oxygen not only relieves pain following dislocations and sprains but apparently hastens the restoration of injured tissues to their normal state.

**Case 15.**—A 45-year-old man sustained dislocation of his right hip, which was reduced. A week later he found walking, which he did with the aid of a cane, very painful. Immediately after the injection of oxygen into the right buttock and thigh the pain was so much relieved that he could walk without the aid of the cane. He reported the next day and said that no more treatment was necessary, as the hip was back to normal.

**Cases 16, 17, 18, and 19.**—Four patients with sprained ankles were treated. The sprains had taken place several days before subcutaneous oxygen was given. Walking was still painful and there was some edema. The pain and swelling in all cases disappeared after one injection of oxygen.

**Case 20.**—A 60-year-old woman had a severe sprain of the right ankle with marked swelling due to hemorrhage. Oxygen was injected an hour after the accident, with partial relief of pain. Three more treatments were given during the following week, after which the pain and swelling disappeared.

**Case 21.**—A 72-year-old woman was seen two days after a severe sprain of the right knee, which was swollen and painful. Immediately after the first injection of oxygen she was able to walk and there was very little pain. After a week, following two more treatments, her knee returned to normal.

#### Suggestions for Subcutaneous Oxygen Research

To those who may be interested in research and wartime medicine, I suggest that the possibilities of subcutaneous oxygen be investigated in the following diseases and conditions, which are practically virgin fields:

1. To prevent infection when foreign objects, such as bullets or pieces of shell penetrate deeply into the tissues.

2. To inject into the area of penetrating wounds to prevent tetanus in patients who are sensitive to horse serum.

3. To relax spastic muscles following cord or other injuries. This suggestion is based on the use of subcutaneous oxygen in three cases of poliomyelitis. In two there was spasticity of the neck muscles, which disappeared after the first injection of oxygen. The third patient was a 9-year-old girl with spasm of the muscles of the right thigh, because of which she was unable to straighten her leg. Immediately after the injection of oxygen the spasm disappeared and she could straighten her leg. I called her family physician a month later and he said the spasm had not returned.

4. To prevent atrophy of muscles and nerves when it is necessary to immobilize any part of the body for long periods of time.

5. To determine the viability of the circu-

lation in cases of crushing injuries. This suggestion is based on the good results obtained in circulatory disease of the extremities when amputation was threatened on account of beginning gangrene, and also on the verbal report of a friend of mine who was called to give an anesthetic for the amputation of a crushed finger. The surgeon consented to wait until subcutaneous oxygen had been tried. The result was that the finger healed and amputation was found unnecessary.

6. For the prevention and treatment of sepsis in compound fractures.

7. For pleurisy, with or without effusion, and for empyema.

8. For the prevention and treatment of pressure sores.

### Suggestion for Inhalation Oxygen Research

The inhalation of 100 per cent oxygen for the treatment of seasickness.

I have successfully treated three cases, the first in 1925 on Lake Superior. Two other cases were treated, but I did not observe them, as I only furnished the apparatus. The report was "no effect."

### Conclusions

The inhalation of 100 per cent oxygen is beneficial in the treatment of: (1) anoxemia; (2) pneumonia; (3) shock; (4) gas poisoning; (5) extensive burns; and (6) as a probable aid, combined with positive pressure, in preventing postoperative pulmonary complications.

The injection of oxygen subcutaneously is an aid in the treatment of (1) acute local infections, in which cases the results are often spectacular; (2) the acute phase of arthritis; (3) ringworm complicated by ulceration; and (4) burns.

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### Discussion

Dr. Alvan L. Barach, *New York City*.—For many years Dr. Evans has advocated the inhalation of 100 per cent oxygen and has consistently reported no ill effects from its use. It does now appear, on the basis of many subsequent reports (Boothby, Mayo, and Lovelace, Fine) that these high concentrations of oxygen may be inhaled by human beings for two and probably for as long as four days when given by mask. Perhaps one of the reasons that 100 per cent oxygen can be tolerated for periods as long as these in human beings is that mask administration of oxygen is accompanied by interruption of oxygen treatment from time to time when the patients are given fluids or food or have their faces cleaned. Interruption of oxygen treatment seems to delay and to some extent to prevent the injurious effects of inhalation of high concentrations of oxygen which have been so consistently observed in animals who have lived continuously in chambers. However, the experience of Clamann and Becker-Freyseng indicated that they became ill at the end of two days in 90 per cent oxygen in a chamber and on the third day suffered from unmistakable lassitude, slight fever, and signs of congestion in the lungs in one of them.

Inhalation of a concentration of 95–100 per cent oxygen would appear to be of especial value in cases of coronary occlusion, shock, hemorrhage, and, in fact, any very severe clinical condition characterized by marked anoxia. However, a caution must be inserted at this point as to the employment of mask oxygen therapy. In a number of instances the patient will tolerate the mask applied to his face for short periods only. When this is the case oxygen therapy by mask should be discontinued, since intermittent oxygen therapy has only a limited field of usefulness. In patients with pneumonia, asthma, and heart failure continuous oxygen therapy is generally indicated.

If the patient cannot tolerate with comfort the constant application of the mask to his face, oxygen should be given either by a well-ventilated and well-administered tent or by a catheter placed in the oropharynx.

I wish to say a few words concerning the indication for the use of positive-pressure respiration. We first employed the inhalation of a therapeutic gas under an increased pressure of 4 to 6 cm. of water, occasionally as high as 10 cm., in the treatment of obstructive dyspnea, in conjunction with helium-oxygen therapy. In patients with asthma or obstructive lesions in the trachea and pharynx, an increased negative pressure during the inspiratory cycle is generally present within the lungs and in the

intrapleural space, which is necessary to draw air in past the point of constriction. It is this negative pressure within the lungs that appears to be responsible for many of the dangerous consequences of obstructive dyspnea. The inhalation of a therapeutic gas under a positive pressure during inspiration has the advantage of gently pushing the inhaled atmosphere into the lungs and in that way lessening the pathologically elevated negative intrapulmonary pressure. During expiration the bronchi do not constrict as much when breathing is conducted under positive pressure. Poulton employed positive pressure in the treatment of proxymal cardiac dyspnea, with improvement in some cases, and also noted improvement in a few cases of bronchial asthma, although he utilized this procedure for very brief periods only.

We have also used positive pressure at Presbyterian Hospital in the treatment of pulmonary edema, and in many instances in which this complication took place in the course of pneumonia, observed a clearing of the signs of edema. Positive pressure, when administered for the treatment of obstructive dyspnea, must be given during both phases of the respiratory cycle. In the treatment of acute pulmonary edema it is also more effective to employ it during both inspiration and expiration, but the clearing of edema has been accomplished in some instances by breathing against a positive pressure during expiration only. Pressures of 4 to 6 cm of water may be employed, although the latter pressure, when used during the expiratory cycle only, does cause discomfort and can be employed for only relatively short periods. This pressure in expiration may be obtained by exhaling through a tube placed under the appropriate water level or by exhaling through a disk with various-sized constricted orifices.

An exceedingly interesting case of irritant pulmonary edema caused by the inhalation of an irritant gas was observed by Dr. Rovenstein, who was kind enough to send me the notes on this case for publication.

The improvement seemed to be specifically related to the inhalation of oxygen under positive pressure during expiration.

The only contraindication that may be present to the inhalation under positive pressure is that of shock. When there is a difficulty in the return of blood to the right side of the heart, the increased

intrapulmonary pressure which takes place during positive pressure respiration may further retard the entrance of blood into the auricle. However, it might be that positive pressure in expiration only may have a therapeutic value in clearing the edema of the lungs that takes place not uncommonly in cases of shock and the application of pressure during only one phase of breathing may not seriously interfere with the circulation. When positive pressure is tried in the treatment of edema of the lungs during peripheral circulatory failure, the pathologic physiology of the clinical entity should be kept in mind and the pressure given cautiously, with frequent determinations of the systolic blood pressure.

The use of oxygen subcutaneously would not appear to exercise a therapeutic effect by increasing the saturation of oxygen in the arterial blood. The mechanical influence of introducing oxygen under the skin may be of very considerable value, as Dr. Evans has indicated, in the treatment of sprains and in those conditions in which spasm of muscles is present. In all events, the favorable results which we have heard this afternoon would suggest further trial of this procedure in the various clinical entities described.

**Dr. John H. Evans**—The discussion by the various members reveals the fact that the healthy animal is still being used in the determination of oxygen dosage for the anoxic patient. Dr. Barach has stated in reply to inquiries that he has never used anoxic animals for his oxygen experiments, also that the Germans who became ill at the end of two days in 90 per cent oxygen in a chamber were healthy when they entered the chamber. In my opinion, whenever an investigator reports that a given percentage of oxygen produced harmful effects, he should make it clear to the reader whether or not the person or animal was suffering from anoxemia before the experiment began. For example, when the term "experimental animal" is used the reader is still in the dark on this point.

Please bear in mind that no one has ever shown that the continuous administration of 100 per cent oxygen is harmful to a human being or animal suffering from anoxemia. We have proved in hundreds of cases that continuous 100 per cent oxygen is not only harmless but exceedingly beneficial when given to anoxic patients for as many days as there is indication for oxygen therapy.

#### REQUESTS FOR BIOGRAPHIC SKETCHES

The success of established publications such as *Who's Who in America*, *The American Medical Directory* published by the American Medical Association, and *The Directory of Medical Specialists*, compiled by the Advisory Board for Medical Specialists, has apparently led others to believe that this is a field worthy of commercial exploitation.

It is presumed that the financial success of such

publications may depend in large part upon the sales of the volume itself. But the sales record of an individual publication might better depend on its intrinsic value as a source of reference for accurate and perhaps specialized information. It is suggested that those solicited may well consider this fact in determining whether the information desired should be supplied.—C. H. C., in *Wisconsin M. J.*, Aug 1944.

# PENETRATION OF ALLERGENS INTO THE HUMAN SKIN\*

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## I. Skin Penetration by Allergens Coming from Without—with Remarks on Contact Urticaria and Contact Atopic Dermatitis, Including "Infantile Eczema"

In order to elicit skin reactions, substances coming from without must first penetrate the natural barriers of the skin's surface. Allergens of contact-type eczematous dermatitis, either during clinical exposures or when applied as patch and other tests, may be assumed to reach at least the living epidermal cells. Similarly, penetration through the outer skin barriers must be assumed in the case of allergens in feathers, wool, silk, in human and other animal danders, etc., in tuberculin, trichophyton, etc., whenever these produce allergic reactions after exogenous contact with the skin's surface, either in the course of natural exposures in such diseases as atopic dermatitis, "infantile eczema," or urticaria, or when applied in the form of skin tests.

There are not a few reports of the transepidermal penetration of even the ordinary wheal- and flare-producing allergens. This phenomenon has previously been discussed at some length by Peck and Salomon,<sup>1</sup> Sulzberger,<sup>2,3</sup> Osborne and Walker,<sup>4</sup> M. Albert and M. Walzer,<sup>5</sup> and other authors. Artificial conditions, such as the rather vigorous and prolonged inunctions of allergens suspended in petrolatum practiced by A. Walzer,<sup>6</sup> quite regularly succeed in driving allergens through the probably somewhat abraded skin. The reports of Abramson and Engel<sup>7</sup> are somewhat more pertinent, for they describe the spontaneous transepidermal passage of wheal-producing allergens in certain of their subjects.

Perhaps the description of some of the cases which have come under our own observation may illustrate this phenomenon. As already mentioned,<sup>2,3</sup> we have seen a series of patients in whom the application of "protein" allergens by classic scratch tests elicited urticarial reactions, not only at and around the site of the scratch, but whenever and wherever the allergen-containing fluid touched the grossly unbroken

skin's surface. Thus, where the silk-allergen-containing fluid or the egg or wheat or other allergen solution happened to run down the back or arm from the site of the scratch test, wheal and flare reactions appeared along the entire course of the droplet's contact with the skin. However, even in these cases the transepidermal penetration was not a general one which included all the allergens to which the patient reacted on scratch test, but was in each case apparently selective and limited to certain of these allergens.

In addition to these reactions observed during skin tests, we have seen not a few clinical manifestations proving the penetration of urticariogenic allergens across the skin barriers. These cases may be called "contact urticaria" or "contact atopic dermatitis," etc.

*Case 1.*—A. L., a 5-year-old girl who had been under our care for infantile eczema and atopic dermatitis, while waiting in the office on a warm summer's day, snuggled up against her mother. The mother was wearing a silk blouse. In a few minutes urticarial reactions appeared on one side of the child's face, neck, and shoulder. The discrete wheals were disseminated over and confined to those sites which had been in close contact with the mother's silk garment. At another time this same patient sat on a silk scarf while waiting her turn, and the hives appeared over the appropriate regions. The scratch skin tests with silk were strongly positive in this case.

*Case 2.*—The case of Mrs. H. S. was similar to that of A. L. Here the wearing of certain types of woolen sweaters produced severe itching and discrete wheals at the sites of direct contact and was followed by exacerbations of the patient's atopic dermatitis. In this patient our skin test consisted of cutting out a small piece of the offending sweater, moistening it with water, and merely laying it on a grossly unaffected skin site. Within a few minutes this application produced a cluster of wheals confined to the square of contact and also elicited a crisis of fairly generalized itching.

However, it is noteworthy that by no means all silk or wool garments or tissues produced transepidermal reactions even in these two patients. A. L.'s mother could demonstrate that only *certain* of her silk clothes produced hives through contact with the child's skin, and Mrs. H. S. was able to discover the few among her woolen clothes which elicited her hives and itching. Nor would the "contact whealing" take place at each and every exposure to the offending garments.

*Case 3.*—Another instructive instance was observed in a barman whose hands swelled and itched within a few minutes after contact with orange and

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\* The opinions and assertions contained in this article are the private ones of the writers and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

grapefruit, and whose perioral regions erupted with swelling and itching when orange juice was drunk.

There were among our patients also several bakers, whose hands immediately itched and ballooned forth on contact with wheat flour, and 2 patients who responded with urticarial reactions to carrots as soon as these vegetables touched their skin. We have seen similar immediate urticarial responses to external contacts with other agents, including egg-white and fish.

It is to be particularly emphasized that none of these clinical reactions were of contact-type *eczematous dermatitis*. In some of these cases secondary *eczematization* was present, but the primary reaction was always one of edema, erythema, and itching *beginning within a few minutes after exposure*. It is of great significance to note that none of these patients reacted with typical *eczematous* twenty-four- to forty-eight-hour responses to classic patch tests with the allergens concerned; they did, however, react with unequivocal, immediate wheal reactions to the orthodox scratch tests with the particular allergens.

Still other examples of "protein" allergens penetrating from without are the not uncommon cases of *eczema* of the face and scalp in infants, in which the allergenic contents of feather or kapok pillows or mattresses, wool blankets, clothes, etc., are the culprits and produce local reactions at sites of contact. Our clinical observations indicate that in adults the eyelid areas, the hands, the feet, the perioral and perianal and genital areas seem to be particularly prone to contact-urticarial responses. Urticarial and edematous reactions of the genitalia produced by contact with certain finishes in clothing are, of course, well known.<sup>8</sup> Moreover, as one of us has frequently stressed, many infants and young children and perhaps also many patients with atopic dermatitis seem to have less adequate protective skin barriers than have normal adults. In addition, certain factors, particularly sweating, the slightest friction, the most superficial alkali damage, often seem to promote the penetration of substances coming from without.

*Case 4.*—We could cite numerous other cases in which urticariogenic allergens penetrated to the cutaneous vessels. Thus, the skin of a nurse in a syphilis clinic responded with typical local whealing within a few minutes after droplets of therapeutic arsphenamine or neoarsphenamine solutions touched its surface. In this patient a tremendous local wheal encompassing the whole forearm and part of the upper arm followed our skin test, which consisted of a droplet of dilute neoarsphenamine solution applied to grossly normal skin; and the local response was accompanied by a severe constitutional reaction and an asthmatic attack.

Despite these many examples of urticarial responses to external contacts ("contact urticarias"), these cases nevertheless represent the *exceptions*. The rule is that the so-called "protein" allergens which are the common causes of urticarial responses are unable to penetrate through the intact surface of the human skin with sufficient speed and in sufficient quantity to produce grossly visible whealing. Because of this usual high degree of impermeability of the skin to urticariogenic allergens, skin testing for the urticarial reactions of allergy necessitates the employment of technics which will facilitate the access of the allergen to the vascular layers of the cutis. For this purpose the patch test, inunction test, or other tests consisting of mere external applications are not generally adequate; and the orthodox scratch test, or other abrasive or scarification test, or the intracutaneous test technics are employed to sever or pierce the protective skin barriers and bring about the desired contact between the allergen and the vascular shock tissue. All of these technics involve certain difficulties—e.g., some (slight) danger of infection, risk of inadvertent mixture and reciprocal contamination of allergens, and, particularly in children, varying degrees of emotional and psychic trauma.

The augmentation of skin penetration which was achieved by using certain new composite vehicles<sup>9</sup> in our earlier studies with sulfonamides, mercurials, etc., prompted us to study the possible effects of such vehicles on the transepidermal penetration of urticariogenic allergens.

## II. Experimental Studies with New Penetrating Vehicles

*A. Clinical Material.*—Our studies on the efficacy of inunction tests with protein allergens mixed with the composite vehicles were carried out on a group of 51 patients suffering from atopic dermatitis and on 3 normal adults whose skin sites were passively sensitized by the Prausnitz-Kustner technic.

In all the atopic cases the skin had previously been shown to respond with an urticarial reaction to scratch tests with one or several protein allergens.

The subjects included male and female patients whose ages ranged from 2 to 67 years.

*B. Procedure and Technics.*—In the atopic subjects all skin tests were carried out on clinically normal and intact-appearing skin sites at some distance from skin areas which were involved by the atopic dermatitis. A drop of the selected vehicle was placed on the chosen skin site by means of a medicine dropper. A small amount of powdered protein allergen was picked up with the flat end of a toothpick and deposited on top of the drop. The rounded end of a glass



rod, 4 to 6 mm. in diameter, was then used to mix the vehicle and powdered allergen; and by gentle but thorough rubbing into the skin the resulting mixture was distributed over an area about 2 to 3 cm. in diameter. The inunction was carried out for a minimum of ten seconds and in the large majority of tests for thirty seconds.

*C. Allergens Employed.*—The allergens used included the following:

1. Foods: Egg (white and yolk), milk, casein, veal, pork, lamb, bluefish, herring, sole, halibut, codfish, lima bean, navy bean, peas, carrots, tomatoes, spinach, wheat, corn, rye, oats, grapes, lemon, oranges, apple, grapefruit, peach, strawberries, pineapple, peanut, cocoa, coffee.

2. Pollens, Epidermals, etc.: Short ragweed, giant ragweed, cocklebur, march elder, orchard grass, blue grass, june grass, timothy, red top, rose, hemlock, hickory, sycamore, white oak, locust, orris root, pyrethrum, tobacco, cotton, cat hair, goat hair, horse dander, horse hair, goose feathers, chicken feathers, dust, silk, kapok.

*D. Objectives, Tests, and Controls.*—In these studies we had four principal objectives in view:

1. To observe whether the new composite vehicles actually achieved a significant increase in the penetration of the allergen into the unbroken skin as compared with the allergen alone or with the allergen suspended in the vehicle commonly used for dissolving powdered allergens in scratch tests (N/10 sodium hydroxide).

2. To observe the degree to which the various constituents of the different vehicles each contributed to any increase in penetration achieved by the respective complete vehicle.

3. To compare the reactions elicited by inunction of the allergen plus the complete vehicles with the reactions produced by the same allergen applied by the orthodox scratch-test technic.

4. To rule out nonspecific irritative and traumatic effects of both the scratch and the inunction tests.

To accomplish these four purposes, in each subject each allergen was applied in a series of tests, as shown in Table 1.

*E. Vehicles Studied.*—In the 51 subjects, a total of 584 such complete series of tests have been carried out with the following four vehicles, their constituents, and the above described controls:

Vehicle A	Aerosol MA	1 weight part
	antipyrine	1 weight part
	xylene	1 volume part
	propylene glycol	4 volume parts
Vehicle B	Aerosol IB	1 weight part
	antipyrine	1 weight part
	xylene	1 volume part
	propylene glycol	4 volume parts

Vehicle C	Sodium p-xylene sul- fonate	1 weight part
	antipyrine	1 weight part
	propylene glycol	5 volume parts
Vehicle D or analogous combinations	Alkyl benzene sul- fonate mixture	2 weight parts
	antipyrine	2 weight parts
	water	2 volume parts
	propylene glycol	5 volume parts

It is obvious from the above-mentioned figures of 584 complete series of tests that many of the 51 patients were tested, not only once and not only with one allergen, but repeatedly and with several allergens. Some were tested twice weekly for periods of time ranging up to twenty-eight months.

*F. Results and Discussion.*—1. Description of Reactions: In general it may be said that the inunction tests with the penetrating vehicles frequently produced urticarial reactions of considerable intensity (Fig. 1). As a rule, the reactions appeared within two to five minutes after inunction, sometimes even earlier, and in some cases before termination of the inunction procedure. The reactions manifested themselves first by erythema accompanied by a slight diffuse elevation and followed by the formation of minute wheals at or around the openings of the hair follicles. In the stronger reactions, as these discrete wheals became larger they coalesced and eventually formed one large wheal with pseudopods and surrounded by more or less marked erythema. The reaction then gradually subsided, passing through a stage during which the erythema surrounding the wheal disappeared, while the area previously covered by the wheal became erythematous and slightly edematous.

TABLE 1

- |    |  |
|----|--|
| A. | Inunction tests with respective powdered allergen with at least one, but usually with several of the complete vehicles.  |
| B. | Inunction tests with vehicles alone (to rule out the urticariogenic or irritating effects of the vehicles themselves).   |
| C. | Inunction tests with powdered allergen and with each separate constituent of the vehicles, as well as with incomplete combinations of constituents of the vehicles (to observe the action of individual components and combinations of components).  |
| D. | Inunction tests with separate constituents alone or in different combinations and without the presence of allergen (to rule out the urticariogenic or irritating effects of the constituents themselves).  |
| E. | Control inunctions of the powdered allergen alone; and of the powdered allergen plus N/10 sodium hydroxide (to ascertain the penetrating capacity of the allergen alone; and of the allergen in the most commonly employed vehicle).   |
| F. | Control scratch tests with powdered allergen plus N/10 sodium hydroxide; and with N/10 sodium hydroxide alone (to ascertain the subject's response to the allergen in the usual form of testing, and his response to the trauma and chemical effects of this test in the absence of allergen). |



FIG 1 Reactions to inunction tests in patient strongly positive to scratch tests with kapok

- 1 Inunction of kapok plus vehicle A
- 2 Inunction of kapok plus vehicle B
- 3 Inunction of kapok plus vehicle C
- 4 Inunction of kapok plus 1/10 N sodium hydroxide

(Photo about 25 minutes after application of tests)

2 False Negatives Taking the *scratch test results as an absolute standard*, the various vehicles and components gave the incidence of "false negatives" shown in Table 2 ("False negative" signifies that the results of the inunction of the powdered allergen with the particular vehicle were negative, while the scratch tests were positive.)

As far as the inunctions in the *absence of allergens* are concerned, the control inunctions with the vehicles, with the separate constituents, and with combinations of constituents, did not produce whealing except in a few individuals who were shown to have dermatographism. These traumatic or dermatographic reactions were much more transitory than true allergic whealing and did not resemble the allergic urticarial reactions to a sufficient degree to confuse the results. As a matter of fact, it was our impression that the difference between traumatic dermatographism and allergic urticarial reactions tended to be rather more distinct with inunction tests than with intradermal or scratch tests.

TABLE 2—FALSE NEGATIVES

With propylene glycol	67	per cent false negatives
With propylene glycol plus antipyrine	65	per cent false negatives
With propylene glycol plus antipyrine plus xylene	62	per cent false negatives
With N/10 sodium hydroxide	52	per cent false negatives
With propylene glycol plus aerosol MA		
Similarly with propylene glycol plus aerosol IB and with propylene glycol plus Na p xylene sulfonate	(average)	12.7 per cent false negatives
With propylene glycol plus antipyrine plus aerosol MA		
Similarly with propylene glycol plus antipyrine plus aerosol IB	(average)	7.6 per cent false negatives
With complete vehicle C	4	per cent false negatives
With complete vehicle A	2	per cent false negatives
With complete vehicle B	2	per cent false negatives
With complete vehicle D	0	per cent false negatives

As will be seen in Table 2, the incidence of false negatives decreased as the various constituents of the vehicles were added, and reached an absolute minimum—that is, zero—with the complete vehicle D. It should also be mentioned that the reactions with the allergen plus *complete* vehicles, and particularly plus complete vehicle D, tended not only to be more regular but also on the whole to be stronger than those elicited by the allergens plus separate constituents, or by allergens plus incomplete combinations of constituents.

3 Selective Increased Penetration of Different Allergens Since, in contrast to vehicles A, B, and C, the inunction tests with the allergen powders in type D vehicle produced a positive result in every instance in which the scratch test was positive, it may be concluded that type D vehicles are, in this respect, the most efficient we have developed to date. However, the type D vehicles were developed only after trials and experiments lasting over one and a half years. Our earlier vehicles, A, B, and C, were all characterized by the fact that they contained xylene or its derivative p-xylene sulfonate. These vehicles, when considered separately, failed to produce a satisfactory minimum of false negatives. However, in their aggregate and when a positive reaction with any one of the three was considered as significant, the false negatives went down to 0.25 per cent. This fact is best explained by our observation that certain allergens can be made to penetrate best by the use of distinctly lipophilic carriers, as represented by vehicles A and B, while other allergens penetrate best with hydrophilic agents, such as vehicle C. On this basis the allergens we used could be divided roughly into two large groups. All foods and all pollens, except those of the white oak and locust, penetrated better with vehicles A and B, while all "inhalants" except pollens, and all "epidermals," with the notable exceptions of silk and kapok, penetrated better with the more hydrophilic vehicle C.

Our search for a vehicle that would prove to be

a "universal carrier" for all allergens led to the development of type D vehicles. And, as shown in Table 2, this type of vehicle appears to have the desired property of carrying all categories of allergens into the skin with equal facility. Moreover, since type D vehicles contain no xylene or derivatives, they are even less likely to irritate the skin than the xylene-containing combinations. We have been able to apply type D vehicles even to some of the most sensitive skin areas, and we have indications that they may be used with impunity even on mucous membranes.

4. False Positives: Up to this point our discussion has mentioned the discrepancy in only one direction—i.e., when the inunction tests were negative but the scratch tests positive. A few words must be said about the discrepancy in the opposite direction—i.e., about *positive* inunction tests in the presence of *negative* scratch tests. These false positives with the inunctions could often be accounted for on a purely quantitative basis—by the observation that the inunction tests were, on the whole, "stronger" than the corresponding scratch tests. There were, for example, several instances in which the inunction tests were positive, the intracutaneous tests were also positive, but the scratch tests were negative. Moreover, when, during the course of repeated inunction and scratch tests, the patient's skins tended to manifest a diminution of sensitivity, the scratch test reactions would frequently diminish in intensity and even fail to appear at a time when inunction tests still elicited strong reactions.

### III. Conclusions and Remarks

In conclusion, our results appear to warrant the following statements:

1. Type D vehicles—i.e., the most recently developed, xylene-free combinations—are relatively nonirritating solutions which greatly promote the transepidermal penetration of all the powdered "protein" allergens we employed.

2. The results obtained in our inunction tests with these vehicles correspond closely with those obtained in the same cases with the orthodox scratch test.

Despite this close correspondence, we do not believe that our results prove that our inunction tests with the new vehicles can, in the present state of our knowledge, supplant the orthodox scratch or intracutaneous technics. On the contrary, it must be emphasized that the decision as to the practical value of the new vehicles and tests must await the results of further studies. Our present experiments were carried out almost exclusively in patients with atopic dermatitis who, as previously stated, are inclined to have skins of less than normal impermeability. We

have, as yet, insufficient information on how reliable the inunction tests will be in normals or in patients with such conditions as urticaria, asthma, hay fever, etc.

Another of the many problems requiring further study is that of the possible use of inunctions with the new vehicles as means of administering allergens for specific *prophylaxis and desensitization* therapy. While there is some evidence that intra- or percutaneous administration of antigens and allergens is often a particularly effective route, and while there are certain factors which would seem to support the possible usefulness of inunction versus subcutaneous injection, large series of further studies will be needed to demonstrate the clinical effects of percutaneous inunctions in the new vehicles.

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### Discussion

Dr. Mary Hewitt Loveless,\* *New York City*—Whereas Drs. Sulzberger, Baer, and Herrmann have done pilot experiments with numerous vehicles and many allergens, we have restricted our studies to one allergen—pollen—and to two vehicles. One of the latter was lipophilic (type A), and the other was a universal carrier referred to as type D by Dr. Sulzberger. Our aim was to learn whether these vehicles would carry sufficient allergen through the intact skin to be of use (a) in the diagnosis and (b) in the treatment of pollen hay fever.

Our clinical material consisted of 52 patients with clinically proved pollen-allergy (usually ragweed hay fever or asthma). The degree of sensitiveness ranged from slight to extreme. Approximately half the group never had been tested or treated before consulting us and receiving inunction tests. With a few exceptions, only one set of tests was performed on each individual, so that all tests would be comparable.

The materials to be tested were gently rubbed onto the skin of the forearm with a large, smoothly rounded glass rod for exactly two minutes. The test materials were as follows: (1) crude, undefatted

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pollen wetted with vehicle A, (2) crude, undefatted pollen wetted with vehicle D, (3) crude pollen moistened with buffered saline solution at pH 7.4, (4) vehicle A alone, (5) vehicle D alone, and (6) buffered saline solution alone. The first dozen tests with the last three of these gave uniformly negative responses and were subsequently omitted. The other injections were capable of producing in suitable patients small wheals of about 1 mm diameter surrounded by erythema which reached a maximum in twenty to thirty minutes. Sometimes the wheals were so numerous that they became confluent.

Concurrently with the injection tests, we performed threshold tests of the conjunctiva of the skin (intracutaneous technique) and, in the instance of 21 previously untreated cases, of the nasal mucosa. Blood samples were also withdrawn so that the serum antibodies could be studied. At the termination of the testing period comparisons were made between the results with the new vehicles and the older testing methods to gauge the efficiency of the injection technique. Ten patients took daily injections to test the therapeutic effect of giving antigen through the intact skin.

**Findings**—As a preliminary step, the relative effectiveness of the two vehicles as carriers of pollen was investigated. Some patients reacted more with one vehicle than with the other but the differences were not marked and were about equally distributed between the two solutions tested. To simplify our analysis, we selected the larger of the reactions for each patient as representing his response.

Among 52 hay fever cases, 30 gave wheal-and-flare reactions to pollen mixed with one or each of the vehicles, the degree ranging from slight to very marked. This means that there were 42 per cent of false negative reactions among our proved cases of pollen sensitiveness. All 52 subjects gave definite responses to the concurrent tests of the eye, skin, nose, and serum.

When comparison was made between the injection test and the conjunctival test in these patients, it was apparent that a greater incidence of marked conjunctival sensitivity existed among those who showed positive reactions to injection than among those with negative injection tests. Similarly, patients giving positive injection responses tended to show greater reactivity to intracutaneous test than did those who failed to react percutaneously. This was also true for the nasal test.

We were surprised to find that about half of the positive reactors to injection tests with penetrants also responded, although to a lesser degree, to injection with buffered saline solution and pollen. The new vehicles seemed only to enhance an already existing tendency for pollen to penetrate the intact skin under the influence of gentle rubbing. Although the tendency for the injection to produce positive responses was in general greater as the intracutaneous, ophthalmic, and nasal sensitivity of the patient was more marked, there were notable exceptions to this relationship. Injection reactions failed to appear in occasional cases of high sensitivity, indicating that special skin barriers, such as an oily coating, may have been present in these individuals.

Following their tests, the majority of the patients were given specific subcutaneous injections. It is our custom to augment the dosage as rapidly as possible, the rate varying with the individual. It was found that those patients who gave decided reactions to the injection tests were, in general, less able to tolerate rapid dosage increases than the nonreactors. Furthermore, generalized responses to injection occurred five times more often in the positive injection test group than in the negative group.

These observations relative to therapy lead us, as did the preceding tests for sensitivity, to conclude that highly allergic patients are the ones who usually respond to injection tests. Since markedly allergic subjects are also more responsive to scratch test than are the relatively insensitive patients on the whole, it is probable that the low incidence of false negative reactions found by Dr. Sulzberger and co-workers with the injection test is attributable to the fact that he used the positive scratch reaction as the basis for comparison. Moreover, as is well known, atopic dermatitis patients such as were employed by Sulzberger and his collaborators represent a particularly highly skin-sensitive group.

Ten patients who had given marked responses to injection test were instructed to take daily rubs at home as a form of therapy. They began with a dose of one toothpick pointful of crude pollen, rubbing it gently into the skin of the arms or legs for ten minutes with vehicle A (or D) each evening. The dose was increased as rapidly as possible, the localized reactions serving as an index to the tolerance. Treatment was continued for from six days to three months and the top daily dose ranged from one toothpick pointful of pollen to seventeen. Localized urticarial reactions occurred promptly after all injections, and untoward responses were experienced by all but one subject. The latter developed after two or more injection treatments, appeared within twenty minutes to twelve hours after the rub, and persisted for from one to twenty-one days after therapy was discontinued. There were six instances of hay fever in different patients, seven cases of dermatitis, and one attack of asthma, all probably related to injection. The eruption was maculopapular, intensely pruritic, and lasted for four days to three weeks, although therapy was discontinued as soon as the rash appeared. It was in no instance vesicular and, in the opinion of Drs. Sulzberger and Baer, resembled an atopic dermatitis caused by external contact rather than a contact type of eczematous dermatitis. The idea that pollen antigen may have passed percutaneously into the general circulation was strengthened by the complaint that previous and distant sites of injection as well as the skin generally, became very itchy some twenty minutes after injection treatments. This was experienced by most subjects.

The hay fever symptoms were possibly on the basis of circulating antigen also, for the patients had been carefully instructed to avoid inhaling the crude pollen when placing it on their skins. The enhanced sensitization appeared to be lasting, inasmuch as we recently observed the site of an injection test with ragweed pollen and buffered saline solu-

tion to develop a typical eruption which persisted for two weeks. The patient had had a similar rash following her inunction therapy a year before.

Three patients were allowed to go through the season of pollination with no therapy except the course of inunctions. One reported rather good clinical resistance to oak pollen and very good results during the ragweed season. He had taken inunction courses with each of these pollens for many weeks. A second patient experienced a good timothy grass season and a fair amount of improvement in her ragweed hay fever. The third patient likewise reported good improvement in his timothy hay fever. None of these patients showed any significant change in thermostable antibody as the result of their inunction treatments. However, two of the three patients were studied by conjunctival tests of the threshold type and both showed a decided acquisition of immunity following inunction therapy. The remainder of the 10 patients in the group were given regular inunction therapy because serologic studies likewise failed to reveal any acquisition of thermostable antibody for the related allergens following inunctions. The number of patients allowed to go through the pollinating season with no treatment other than inunctions was, of course, too small for us to draw conclusions as to therapeutic effect.

These preliminary experiments bring up the question: What is the immunologic mechanism underlying the untoward reactions in the inunction-treated group? The fact that these responses developed after surface contact puts them into the class of contact allergy; but the nature of the symptoms was such as to suggest atopic vascular allergy related to protein-like allergens. Dr. Sulzberger has referred to his positive inunction tests as resembling "contact urticaria." We may, for the time being at any rate, describe our allergic manifestations as "contact hay fever and contact type of atopic dermatitis." It is to be hoped that Dr. Sulzberger and his collaborators will continue experimenting with this fascinating new tool, the skin-penetrating vehicle, and that out of such work our understanding of the immunologic mechanisms of the various allergies will be expanded.

From a practical point of view, our experiments suggested that the inunction test can serve as a diagnostic aid in pollen allergy, providing the reaction is positive. If it is negative in a patient whose history indicates sensitiveness of a seasonal nature, tests should be performed by the intracutaneous, conjunctival, and/or serologic techniques. Subjects who give definite responses to inunction with these skin-penetrating solutions plus pollen are apt to be highly sensitive in degree and the test can thus warn the physician to administer antigen in a more leisurely manner than he would otherwise employ. There are not infrequent exceptions to this relationship, however, and the test would serve as a crude guide only. As an aid to therapy, it appeared to bring clinical relief to the three patients who took no other treatment. Unfortunately, with the dosage employed by us, the treatment almost invariably provoked untoward allergic reactions. Perhaps smaller doses would obviate this complication of

therapy and still prove effective clinically. The observation that three patients procured a certain amount of clinical relief after inunction therapy but failed to produce circulating thermostable antibody is a challenge which calls for further investigation by those of us who feel that the neutralizing antibody plays some role in the control of hay fever.

It is, of course, possible that tissue immunity was present without detectable humoral immune bodies and that these played a part in the clinical resistance. It is perhaps of real significance that local required immunity was detected in the eye, a shock tissue of hay fever, even when it was absent from the blood. The details of the data referred to in the preceding discussion will be published shortly.

**Dr. Franz Herrmann**—With regard to the desensitization trials, it should be pointed out that Dr. Loveless supplied patients with the plain powdered pollen allergen, which was inuncted with the vehicle at regular intervals, and the patients developed severe, asthmatic or cutaneous reactions. We encountered opposite and very promising results by giving individuals with atopic dermatitis very dilute suspensions of powdered allergen in the vehicle for daily inunctions at home; the initial allergen concentration was 1:10,000, the highest concentration reached gradually was 1:500.

**Comdr. Marion B. Sulzberger**—We are all greatly in debt to Dr. Loveless for her excellent work and fine report, and I want to thank her personally for her discussion. There is no great discrepancy between Dr. Loveless' findings and ours. When we tested a few patients who were negative to scratch tests but positive to intracutaneous tests we found that the correspondence between our inunction tests and the intracutaneous tests was only about 50 per cent; i.e., we had approximately 50 per cent false negatives in the few cases in which we used the reactions to intracutaneous test as a base line, in contrast to the 100 per cent correspondence between the scratch test reactions and the inunction tests with the latest and best D-type vehicles.

We hope that Dr. Loveless and others will continue with this work and see whether, when they use the latest D-type vehicles they find that there is such close correspondence between scratch test and inunction test reactions also in their hay fever, asthma, and other patients. Unfortunately, our own clinical material consists almost exclusively of atopic dermatitis patients; and, as I have tried to emphasize, their skins may well be generally below normal in their resistance to penetration.

Only time and study will tell what the practical value of our vehicles may be, either in skin tests or desensitization therapy, for vaccination or immunization with toxins or toxoids, for accelerating patch test reactions, for venereal disease prophylaxis, for treating fungous and other affections of hair or nails, or for any other medical or other purposes. We make no assertions or claims as to their practical value today. But we do know that these vehicles carry many substances, including the so-called protein allergens, into and through the skin at a much greater rate than has been possible with other vehicles. Based on this established fact, we recom-

mend these vehicles for study and possible application to any situation in which accelerated and inten-

sified percutaneous penetration may be expected to prove interesting or valuable.

## ANESTHESIA FROM BRITAIN

We are prone to consider anesthesia and all its works as American products. As a consequence we sometimes forget the part played by a kindly but dogged Scotch physician Dr James Y Simpson

ago, on January 19, covered ether in the ber 15, 1847, having like a good anesthe-

The prejudice and intolerance with which he was confronted would

but not thus in-rities who quoted

he retorted "To him that knoweth to do good, and doeth it not, to him it is sin." He prevailed, and subsequent to his delivery of Queen Victoria under chloroform he was knighted.

Sir James approached his problem scientifically. He recognized the objections to ether, but before introducing a new agent, he first tried this out on himself and his friends. The dangers of chloroform were not unknown to him, and therefore in spite of the good results, he continued his search for a still better agent.

Seven advantages over ether were claimed for chloroform: (1) smaller dosage, (2) quicker action, (3) more agreeable sensation, (4) decreased cost, (5) evanescent odor, (6) ease of transportation, and (7) simplicity of administration. He states in *Anaesthesia and Hospitalism*, "I have found, however, one infinitely more efficacious than any of the others—viz., chloroform or perchloride of formyle—and I am enabled to speak most confidently of its superior anæsthetic properties, having now tried it upon upwards of thirty individuals."

ple results, since it well as good," and i, and the counter-

Sir James investigated at least five other chemical agents. In their anæsthetic properties he concluded "They are more interesting physiologically than therapeutically."

We would remind British contributors to this issue that we acknowledge a great debt to Simpson and chloroform. If Simpson had "exhibited it or been present when it was exhibited, in several thousands of instances" before he met with a fatality, with our increased knowledge of physiology and

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sh

ed list of anæsthetic agents. The discriminating anæsthetist recognizes that both agents have disadvantages, but one hundred years have not diminished their advantages.

And so we remain grateful for the contribution of chloroform from over the sea—*Editorial by Howard Dillrick, M D, in Anesthesia & Analgesia, July-Aug, 1944*

## ILLS OF AIRMEN AT HIGH ALTITUDES

The Aero Medical Association met in St. Louis recently and discussed some of the new and difficult medical problems that must be faced when fliers ascend to heights of 35,000 and 40,000 feet. Among the more serious problems are those presented by

by the

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Colter

and Sur-

geons).

Two of the physicians sat in a tank from which the air had been partially exhausted so that the pressure was no more than that which prevails at 42,000 feet. One physician thus subjected himself periodically to test for seventeen months, the other for three. Both contracted tuberculosis.

The scars of healed lesions, often present in normal persons, burst open, for reasons not clear. Possibly the pressure of gases within the scars is the explanation, possibly nitrogen in the blood stream.

The "chokes" are accompanied by coughing and difficulty in breathing. Without an oxygen mask an afflicted man would die. But since he cannot keep the mask on he drops to a lower altitude, where he may be blown to bits by an anti-aircraft shell.

Lt. Col. A. P. Gage of the aero-medical laboratory at Wright Field, Dayton, Ohio, described the Army's new pressure mask, which has hitherto been shrouded in dense military secrecy. Probably the Germans have captured men who wore the masks, so it was safe to give the association the details of their construction.

This new mask does half a man's breathing for him. That is, his lungs are blown up like balloons so that he does not have to inspire. When he exhales he uses his breathing muscles in the normal way.

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At 50,000 feet consciousness was usually lost. Even with the new mask, air crews are good for not much more than half an hour at 45,000 feet. Ex-

small amounts of carbon monoxide are harmful to

oxide may come from engine exhaust gas, tobacco

smoke, or gunfire. It is harmful because it reduces the oxygen-carrying ability of the blood and so in-

creases the ever-present danger at high altitudes that the brain may not get enough oxygen for proper functioning—W. K., in the New York Times,

Sept. 10, 1944

# FRACTURE OF THE NECK OF THE FEMUR

## A Surgical Technic for Reduction and Internal Splinting by Direct Visualization

SAMUEL KLEINBERG, M.D., F.A.C.S., New York City

THE management of a recent fracture at the hip is still an incompletely solved problem, although splendid progress has been made in recent years. Prior to the advent of the abduction method there had been an attitude of indifference and a feeling of defeatism. Consequently, the treatment of a fracture at the hip was characterized chiefly by a lack of treatment. Many of the patients disabled by this fracture remained confined to bed, and sooner or later developed hypostatic pneumonia or pressure sores and infections to which they succumbed. Others, because of or in spite of the poor treatment, managed to get about but remained crippled for life. A few only, presumably patients with fractures in which there was little or no displacement, obtained reasonably good function. When Royal Whitman devised and advocated the abduction method, he initiated an interest in the treatment of this fracture which has persisted and has stimulated many surgeons to devote themselves to the therapeutics of this injury.

To Royal Whitman belongs the credit for insisting on an active program of treatment to be instituted as soon as the patient has recovered from the shock of the injury. He believed that a fracture of the neck of the femur should be treated like any other fracture. The fragments should be brought into good alignment and the limb immobilized in a reliable apparatus. In this way the surgeon can provide the opportunity for repair and healing of the fracture.

The abduction method depended on this principle of immediate reduction and immobilization. It consisted of manipulation of the limb by traction, internal rotation, and abduction. The fragments were realigned by traction and internal rotation. Abduction tensed the capsule, which helped to maintain intimate contact of the fragments. A long plaster-of-paris spica bandage was then applied to immobilize the hip and maintain the reduction until the fracture healed or there was evidence of absorption of the neck and inevitable nonunion. The plaster spica also served to keep the patient free from pain and to permit change of position to avoid hypostatic pneumonia. With this method many fractures healed.

The abduction method, however, had several manifest drawbacks. The incidence of union was unpredictable. The plaster dressing had so

much padding for the protection of the patient's skin that it often became loose, and allowed undesirable motion of the fragments so that slipping of the fragments could and at times did take place within the plaster. The patient was compelled to remain continuously in the recumbent position. Therefore, modification of the abduction method and new procedures were sought.

A very distinct advance was introduced by Leadbetter, who employed a more accurate method of reduction, less abduction, and a skin-fitting plaster spica. I added early weight-bearing to the Leadbetter method. This enabled me to take the patient out of bed a day or two after the reduction. The patients were much happier because of the change of the position, and many rapidly learned to walk well, and enjoyed a measure of independence. The most important effect of the improvement on the original abduction method was the increased contact of the fragments, which favored more rapid vascularization and union.

The utilization of metal plates for the immobilization of fractures in various parts of the skeleton stimulated the attempt to provide an internal splint for fractures at the hip. Hence there came into use the Smith-Peterson and other types of nails as well as wires and screws. My interest in the use of a nail to immobilize the fragments was aroused several years ago when on a visit to Los Angeles, Dr. Vernon P. Thompson exhibited to me a Z-nail which he had devised, and a simple and relatively easy operative method of reduction and fixation of the fragments by his nail through direct visualization of the fracture. My associate, Dr. Joseph Buchman, and I have applied this method rather frequently in the last two years, and I wish to describe it here in detail, because, of all the methods of nailing a fractured hip, this one appeals to me as the simplest. It does not involve the use of accurate measuring apparatus and, even though it is advisable to have checkup films made at the time of the operation, one can, if necessary, reduce the fracture and insert the nail with reasonable and adequate accuracy without the aid of roentgenograms.

The operation can be performed under general, spinal, or intravenous anesthesia. The nail (Fig. 1) is 10 inches long, and  $\frac{3}{4}$  inch wide, and its cross section is Z-shaped, as a result of which the nail gets a grip on the bone in several

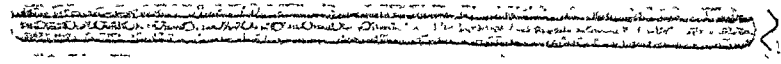


FIG. 1. Z-nail devised by Dr. Vernon P. Thompson. The nail is 10 inches long. One half of it is perforated by holes spaced 1 cm. apart. The cross section is the shape of a Z. The metal is stainless steel.

planes, and tends to remain in the position in which it is placed, fixing and holding together the fragments. The nail, being much larger than the segment required for the fracture, is rather easily inserted. The excess is cut off with special shears about  $\frac{1}{2}$  inch beyond the cortex of the femur. This exposed section is cut vertically and bent over the femur in opposite directions by pliers. The distal half of the nail, that is, the part inserted into the bone, is perforated every centimeter for five inches to facilitate easy calculation of how far the nail must be driven in. Moreover, if the nail has been inserted incorrectly it can be withdrawn by the use of a nail extractor which fits into the perforations in the nail, and reinserted in a more favorable direction. The nail is made of stainless steel and is nonirritating. In none of my cases has there been any evidence of bone absorption through electrolytic reaction.

### Technic of Reduction of the Fracture and Insertion of the Thompson Z-Nail

The patient lies on his back with sandbags under the hip and chest on the side to be operated upon. An oblique incision is made over the anterolateral aspect of the hip (Fig. 2). The incision is about 7 inches long. It begins just below and behind the anterior superior iliac spine and extends somewhat obliquely downward and backward over the anterior border of the greater trochanter and on down the thigh to about 2 inches below the base of the greater trochanter. The incision is extended through the fascia, exposing the interval between the tensor fascia femoris and the gluteus medius, the former of which is retracted forward and the latter backward, exposing the front of the hip joint. The vastus lateralis, which comes into view at the base of the greater trochanter, is either cut transversely and stripped downward for about  $1\frac{1}{2}$  inches, or vertically and the upper part of the femoral shaft is exposed by subperiosteal retraction of the split muscle. In the interval between the tensor fascia femoris and the gluteus medius there comes into view some areolar tissue and directly beneath it the capsule of the hip joint. The capsule is incised and retracted, giving a full view of the fracture and the

relationship of the capital and cervical-fragments (Fig. 3). By gentle traction and internal rotation of the limb the fragments are readily brought into accurate apposition and intimate contact (Fig. 4). Parenthetically it may be stated that it is remarkable how little force is necessary to reduce the fracture, and how little abduction, rarely more than 20 degrees, is required to maintain good apposition of the fragments. Twenty-five years ago we used to be under the impression that an extreme degree of abduction, 60 to 70 degrees or even more, was indispensable to assure the reduction. Later Leadbetter showed that the reduction, once accomplished, could be retained by moderate abduction. Now we know that if the reduction is satisfactory and is assured through an internal splint, as a Thompson nail, one need not be concerned about any large degree of abduction of the limb.

One now proceeds with the insertion of the nail. It is inserted on the middle of the outer surface of the femur at the base of the greater trochanter and is directed toward the middle of the head (Fig. 4). Since the hip joint is exposed and one can see the head and neck, it is relatively simple to point the nail so that as it enters the neck and head it will be well within the substance of these fragments. Before driving the nail into the fragments one lays it on them and decides how far the nail must go to reach the subchondral part of the head and makes a mental note of the distance by seeing which of the perforations is opposite the outer surface of the femur. After the nail has entered the head one can test the security of the fixation by rotating and flexing the limb and actually seeing the head move with the neck, and assuring oneself of the security of the reduction and contact of the fragments. One cannot be absolutely positive that the nail has been driven in far enough; that is, into the subchondral region of the head. Therefore, it is well to have checkup x-ray films of the hip made in the anteroposterior and lateral planes. In a well-equipped service this takes only a very few minutes, perhaps five. If one finds that the nail is not in quite far enough, it is a simple matter to drive it in the additional required distance. The nail is then cut off about  $\frac{1}{2}$  inch from the outer surface of the femur. The projecting portion of the nail is then bent down over the





FIG. 2. Note the scar on the lateral aspect of the hip which indicates the line of the incision. It begins behind and below the anterior superior iliac spine and extends down over and below the greater trochanter.

femur. Thus is created a broad head to the nail. In fact, the ends can be driven into the cortex of the femoral shaft and thus motion of the nail can be permanently prevented.

In the above procedure there is very little bleeding, because the approach to the hip has been through an intermuscular plane. The wound is now rapidly closed in layers. The entire procedure takes about twenty to twenty-five minutes, including the roentgenography. There is little shock and even debilitated, elderly people tolerate the operation very well. I consider this operation certainly no more and probably much less shocking than the closed manipulative reduction. Nailing takes no longer than the closed reduction and plaster immobilization in the hands of an experienced surgeon.

In most instances no additional support is required. If, however, one has encountered much comminution, it is advisable to apply a short plaster-of-Paris spica for a few weeks.

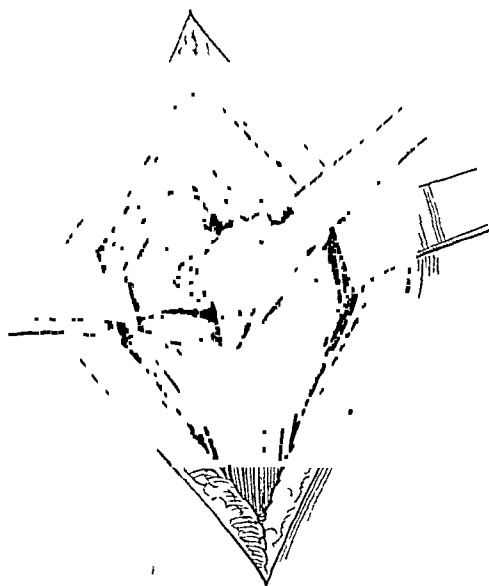


FIG. 3. Exposure of the fracture in the interval between the tensor fascia femoris anteriorly and the gluteus medius posteriorly. The capsule is cut and retracted. The fracture and the displacement of the fragments are outlined.

The postoperative care is exceedingly simple, because the patient has lost all pain and the limb may be moved reasonably freely, both actively and passively. On the first postoperative day the patient is allowed to sit up in bed. On the second or at most the third postoperative day the patient may be taken out of bed and placed in a wheel chair for an hour or more. Thereafter the patient sits up in bed for every meal and is taken out of bed once or twice a day.

About two weeks after the nailing the patient is allowed to stand up either in a "walker" or with crutches. Standing becomes a daily practice, and after one week of standing the patient begins to walk bearing weight on the injured limb. It is surprising to see how rapidly and how well the patients learn to stand and walk. There may be an occasional twinge of pain in the thigh or knee, but most of the time the patient is free from pain and is willing and anxious to walk. Several of my patients have been able to walk without any crutches or even a cane within three to four weeks.

The element of weight-bearing is, in my judgment, an important feature of the treatment because, through this medium, the closeness of the contact of the fragments is increased and thereby assured. Moreover, the closeness of the fragments facilitates the vascularization of the area of the fracture and the capital fragment, and hastens the healing. Prior to my use of the Thompson nail I combined early weight-bearing

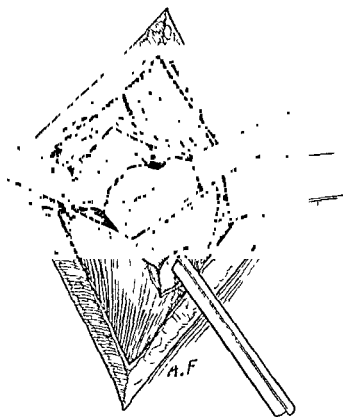


FIG. 4. Visualization of reduced fracture and insertion of the Thompson nail. The nail should extend to the subchondral area in the femoral head.



FIG. 5. Case 1. M. S. Typical transcervical fracture with upward displacement and outward rotation of the shaft.

with the Leadbetter reduction and skin-fitting plaster spicas. I found that healing took place remarkably rapidly and recall only one case in which union did not occur. The weight-bearing serves to impact the fragments. The only potentially poor result is that there may be some shortening of the neck, presumably from the impaction. But by the same token the impaction favors early union. The objection to weight-bearing that has been raised in some clinics is, I think, entirely theoretic. It has been assumed that the capital fragment, deprived of a normal blood supply, undergoes aseptic necrosis. In this weakened state weight-bearing would cause compression and deformity of the head. My experience, however, teaches me that under the circumstances I have described the head does not undergo aseptic necrosis, does not become deformed, and does unite with the neck. Hence I favor early weight-bearing in a fractured hip when the fracture has been properly reduced and the fragments thoroughly immobilized.

The advantages of the Thompson method of open reduction of a fracture of the neck of the femur and the insertion of a Z-nail combined with early weight-bearing appear to me to be the following:

1. It is simple, because the operative approach is through an intermuscular plane.
2. The alignment of the fragments is accomplished through gentle manipulation.

3. The reduction is performed under direct view of the fragments.

4. The insertion of the nail is facilitated by the fact that the surgeon can, during this process, continuously see the fragments and know when the nail has engaged the femoral head.

5. Adequate fixation of the fragments can be confirmed clinically by seeing the head and neck of the femur move simultaneously when the limb is rotated, flexed, and abducted, and roentgenographically by immediate checkup x-ray films.

6. The opportunity for gentle manipulation of the limb and the tissues made possible by a free exposure of the fracture results in minimal operative trauma and postoperative disturbance.

### Case Reports

*Case 1.*—Mrs. Marie S., 76 years old, fell and fractured her right hip on January 10, 1941. I saw her a few hours after the injury and found all of the classic clinical evidences of a fracture at the hip with one inch of shortening of the limb. An x-ray film (Fig. 5) showed a transcervical fracture. She was promptly admitted to the Hospital for Joint



FIG. 6. Case 1. X-ray film made during the operation. It shows the nail driven through the femoral neck in the direction of the head. At this stage it is easy to calculate how much farther the nail must be inserted to reach the subchondral area in the femoral head.



FIG. 7. Case 1. X-ray film three months after the operation. It shows the reduction of the fracture being maintained. The rough outer extremity of the nail is the level at which it was cut off and bent over the cortex of the femur.



FIG. 8. Case 2. Severe comminuted trans-cervical fracture with marked outward rotation and upward displacement of the femoral shaft.



FIG. 9. Case 2. Fracture well reduced. Nail not inserted far enough. It should have been driven in at least another  $\frac{3}{4}$  inch.



FIG. 10. Case 2. Nail maneuvered well into the capital fragment by traction and abduction



FIG. 11. Case 2. Shows patient able to sit comfortably less than three months after the operation.

Diseases and operated upon the following day. Fig. 6 is a copy of a checkup x-ray film made during the operation. It shows a complete reduction of the fracture and the nail driven in the right direction but not having engaged the head sufficiently. The perforations in the nail aided in rapidly determining how much further the nail had to be inserted. The operation was performed under general anesthesia.

The patient reacted well after the nailing but several days later exhibited signs of a pneumonic process in the right lung. This disturbed her physicians much more than it did her, for she had no complaints and was apparently not very uncomfortable. She responded well to the administration of the sulfa drugs, and at the end of two weeks was well enough to be taken out of bed and placed in a wheel chair. Thereafter she was out of bed every day and in less than a week she was taken home. She rapidly learned the use of crutches and was allowed to walk a few minutes several times a day. The extent of the walking was increased daily. In less than a month after she came home she could and did walk across her room rapidly and without any discomfort. At present, less than three months after the accident, she has a full range of motion in the hip, no shortening of the limb, walks liberally during the day, and gets into and out of an ordinary chair without assistance. She has even walked up and down a whole flight of steps. The roentgenogram (Fig. 7) shows good alignment of the fragments.

Case 2.—Sam G., 61 years old, was admitted to

the Hospital for Joint Diseases on January 15, 1944. Several days previously he had fractured his left hip (Fig. 8) and three ribs. On admission he had a temperature of 101.4 F., apparently caused by an upper respiratory infection. Because of the elevated temperature the operation was postponed until January 18, when it was performed under spinal anesthesia. The clinical manifestations of the hip fracture were classic, including shortening of the limb of 1 inch.

At operation the fracture was found to be of the comminuted variety. However, the fragments were easily aligned and a Thompson nail was inserted (Fig. 9).

The patient was taken out of bed on the third postoperative day, and daily thereafter. He developed the habit of holding the injured limb continuously in adduction. Not enough attention was paid to this fact until the eighteenth postoperative day when a checkup x-ray film showed what appeared to be a slightly lateral displacement of the nail in the capital fragment. In retrospect the nail was not driven into the head sufficiently far (Fig. 9), so that its hold on the head was not secure. Traction in abduction was promptly instituted and several days later a supporting plaster-of-Paris spica bandage was applied. At this time the nail was well within the head (Fig. 10). He rapidly learned to stand and walk.



FIG. 12. Case 3. Severe transcervical fracture.

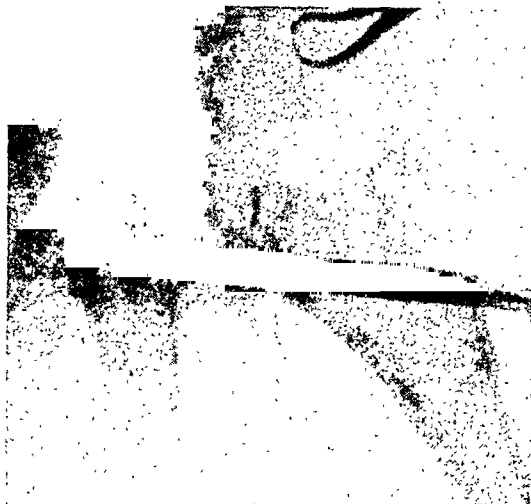


FIG. 13. Case 3. Reduction of fracture and insertion of the Thompson nail.



FIG. 14. Case 3. This film was made six weeks after the operation. Compare with Fig. 13. The neck has been shortened by the impaction of the fragments through walking and weight-bearing.



FIG. 15. Case 3. Shows patient able to sit normally in a straight-backed chair.

The plaster spica was left on until April 7, 1944, when a roentgenogram showed satisfactory alignment of the fragments and the fracture healing. There was no shortening of the limb and the range of motion in the hip was about half of the normal. The patient was able to sit reasonably well (Fig 11) and enjoyed walking, which he did for several hours a day without discomfort or undue fatigue.

**Case 3**—Mrs B H, 60 years old fractured her left hip on February 13, 1944, and was operated upon several days later. She had sustained a severe, comminuted fracture (Fig 12). The fragments were brought into close contact and a nail was inserted (Fig 13). Because of the comminution a short plaster spica was applied and left on for several weeks. A checkup x ray film made on March 27, 1944 (Fig 14), about six weeks after the operation, showed the fragments to be in good contact and uniting. The fragments have been impacted by the walking and weight-bearing, as is shown by the fact that the neck is somewhat shorter than it was in the film made six weeks previously (Fig 13).

The patient began walking with crutches two weeks after the operation and continued daily. At present, a little over two months after the operation, the patient is home, walking about freely and without any discomfort. There is no shortening of the limb. She is able to sit in a straight-backed

chair (Fig 15) and has an extensive, although not quite normal, range of motion in the hip.

### Summary

My chief interest in this presentation is again to direct attention to the treatment of fracture of the neck of the femur. My main concern is with the philosophy of the treatment and more particularly with the change in the general attitude of therapy from the conservative to the operative management, which marks a distinct advance in the solution of a difficult problem. It is my belief that in all but the exceptional cases the open reduction of the fracture and the internal splinting of the fragments constitute a procedure which now supersedes all previous conservative measures. I desire especially to emphasize the simplicity and effectiveness of the surgical technique and the Z-nail devised by Dr. Vernon P. Thompson. Last, I wish again to recommend the institution of early weight-bearing in the management of a cervical fracture at the hip because, when the fragments have been properly aligned, intimately contacted, and adequately immobilized, early weight-bearing serves to further impact the fragments and hasten healing.

### THE PREVENTION OF CANCER

In a recent and interesting discussion<sup>1</sup> of preventive medicine occurs the statement:

"Prompt and aggressive treatment—a purely curative process—takes on a strongly preventive coloring because it may forestall serious deterioration or death. This is true also of cancer, a non-preventable disease of unknown cause which can

intervene at a profitable stage in many cases of cancer which would otherwise go unrecognized until they were incurable. The gastrointestinal x ray study which a careful diagnostician orders when confronted with certain abdominal symptoms is thus an important tool of preventive medicine."

Suffering and death from cancer are prevented by its cure and in that respect cancer is preventable. But the remark that cancer is a nonpreventable disease, presumably in the sense that its onset cannot be prevented, and of unknown cause is open to question.

The causes of cancer are by no means unknown. Experiments have demonstrated that a large number of substances can cause cancer. True, the exact mechanism of cancer causation is not understood. Neither do we understand just how the tubercle bacillus causes tuberculosis. Our knowledge of these and other more or less similar mechanisms is as yet mainly in the observational and descriptive stage.

There are many examples of cancer in man that

arise under the influence of particular agents under such circumstances that there can be no doubt as to cause and effect. One of these is chimney sweeps' cancer of the skin, recognized by Percival Pott in 1775 as due to the action of soot, from which carcinogenic chemicals have been isolated in recent times. Other examples are mule spinners' cancer, due to mineral oil, cancer of the skin in tar workers, cancer of the lip in fishermen repairing tarred nets, cancer in workers with aniline dyes, and cancer in x ray and in radium workers. In other cancers the causative condition is obvious but the precise agent is not known. This is the case of cancer at a spot where the mucous membrane of the mouth has been rubbed by a ragged tooth or an ill fitting denture or at the spot on the cheek against which the quid of chewing tobacco has been held perhaps for years. In cattle cancer may arise at the root of the horns where the traction rope runs back and forth. In industries carcinogenic chemicals are used which on entrance into the bodies of workers may cause preventable cancer. The successful results of planned experiments could not be more convincing of the preventability of human cancer than these and other clinical examples. Generally speaking, the association of cancer with chronic inflammatory and irritation lesions—"precancerous conditions"—is so close that their prevention and

clinics for cancer prevention. All the efforts to control cancer are based on the possibility of preventing its start as well as its advance.—*Editorial, J.A.M.A., Aug 28, 1944.*

<sup>1</sup> Smith G. and Evans L. J. *Preventive Medicine: An Attempt at a Definition*, Science 100: 39 (July 21) 1944.

# AN EVALUATION OF THE USE OF CURARE IN ENDOSCOPY

JOSEPH S. SILVERBERG, M.D., and F. PAUL ANSBRO, M.D., Brooklyn

CURARE has been utilized in the practice of anesthesiology because of its relaxing effect on the striated musculature. Cullen<sup>1</sup> stimulated our interest in the subject when he reported some cases in which he successfully used this preparation for this effect in endoscopic procedures. This presentation concerns itself with the use of curare in endoscopy.

Curare is a drug used by the South American Indians as an arrow poison. It is extracted from the bark of certain plants. The active principle, isolated by King, is described as a crystalline quaternary base chloride designated by him as d-tubocurarine chloride.<sup>2</sup> It acts physiologically by interrupting the nervous impulses at the neuromuscular junction. It is believed that this is brought about by a neutralization of the acetylcholine reaction. This, in turn, constitutes the fundamental neuromuscular stimulation mechanism.

It is claimed that curare is of value in endoscopy because of its progressive action. After administration, it is noted that certain muscles of the head and neck relax before paralysis of the respiratory muscles and the muscles of the extremities develops. In man,<sup>3</sup> shortly after administration, a weakness of the extraocular muscles and lids is noted, speech becomes thick and nasal, and swallowing is impaired. Soon it is difficult and then impossible for the patient to raise his head from the table; muscle strength is now found to be markedly impaired. This sequence usually follows in approximately two minutes after intravenous injection.

There is apparently no direct effect on the cerebrum, while a moderate fall in blood pressure of 5-10 mm. of mercury and a 5 per cent increase in the pulse rate is noted. These return to the normal level on discontinuing the drug.

West<sup>4</sup> has reported bronchial spasm when curare is used. Previously, Trendelenburg had stated that bronchial muscle was not affected by curare.<sup>5</sup> We have encountered one patient who had bronchial muscle reaction with the preparation we have been using. It is said to be free from elements that cause significant cardiac depression.

In the application of the drug, it was considered advisable to choose the intravenous route in order to obtain the maximum effect quickly

and to aid in determining the proper dosage. In our first series, we began with 10 to 20 mg. and increased the dosage gradually. With this conservative technic we found that we could not obtain sufficient concentration of the drug in the blood-stream to paralyze the neck muscles so that the patient was unable to raise his head from the table. When injected so slowly, the drug appeared to be detoxicated and eliminated as it was given. Therefore, in our second series we administered the minimum dose of curare as it is used in psychiatry to soften convulsions in metrazol shock therapy. Curare was injected intravenously, in a dosage of 0.5 mg. per pound of body weight less 20 mg. for the initial injection. The dosage was then increased until the full physiologic effect was obtained. The upper limit was 0.75 mg. per pound of body weight. In only one case was this limit exceeded slightly. The injection was performed slowly over a period of one to one and one half minutes. Each additional injection was given after waiting a full two minutes. Some means of applying artificial respiration with oxygen and carbon dioxide was kept close at hand. Patency of the airway was also constantly maintained. No patient was left alone until consciousness was fully regained.

In the event of respiratory failure, we were always prepared to administer artificial respiration immediately, with the addition of prostigmine in a 1:2,000 dose. The prostigmine is employed to counteract the effect of an overdose of curare.

Atropine was given prior to the injection to block the muscarinic action of the drug. The usual preoperative sedation, such as the barbitals, was also administered. It is not advisable to combine morphine with the barbitals lest the combination with curare produce an overdepression of the respiration.

Patients who have myasthenia gravis are said to be extremely sensitive to the drug. One fifteenth to one fifth of the average adult dose may produce a profound exaggeration of symptoms.

Although Cullen applied the drug in children, we excluded children from this series. More than half of our patients were past sixty. We note the fact that many of our patients were not as good surgical risks as those from other hospitals. In the past, however, we have not had much difficulty in performing bronchoscopy or esophagoscopy on this type of patient.

## Case Reports

Cases 1-4.—The first 4 cases in our series (Table 1) included 2 men, 53 and 65 years of age respec-

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944.

From the Department of Anesthesiology and the Department of Otolaryngology, Kings County Hospital, Brooklyn, New York.

TABLE 1—SUMMARY OF CASES

Case	Sex and Age	Weight (in Pounds)	Dose in Mg.	Procedure and Diagnosis	Relaxation	Respiratory Effect	Circulatory Effect	Resuscitation
1	M, 53	..	60 (10, 10, 10, 10, 10, 10)	Bronchoscopy and biopsy Obstructed left middle lobe with atelectasis	Good*	None	None	
2	M, 65	...	60 (20, 10, 10, 10, 10, 10)	Bronchoscopy Atelectasis of right middle and lower lobe	Good*	None	None	
3	F, 46	...	60 (20, 10, 10, 10, 10, 10)	Bronchoscopy Carcinoma of lung	Fair—less difficulty than usual*	None	None	
4	F, 23	...	60 (20, 10, 10, 20)	Bronchoscopy Chronic cough	No relaxation of any muscles	None	None	
5a	M, 68	...	45, 55 m <sup>1</sup> (35, 10)	Bronchoscopy Neoplasm	**	Cyanosis—paralysis of respiration, apnea 1½ minutes	Thready pulse	Artificial respiration, prostigmine, E and J resuscitator, carbon dioxide
5b	F, 50	114	30 45, 57 m <sup>1</sup> (35, 10)	Bronchoscopy Neoplasm	Good** Good**	None	None	
7	F, 67	171	80, 85 m <sup>1</sup> (40, 20, 20)	Esophagoscopy Esophageal hernia	Fair—less difficulty than usual*	None	None	
8	F, 20	130	80, 65 m <sup>1</sup> , 96 m <sup>2</sup> (45, 20, 15)	Esophagoscopy Stricture	Good**	None	None	
9	F, 52	187	104, 93 m <sup>1</sup> , 138 m <sup>2</sup> (74, 20, 10)	Esophagoscopy Heterogeneous abscess secondary to foreign body	Good**	Cyanosis, generalized convulsions	Thready pulse	Artificial respiration, E and J resuscitator, oxygen
10	M, 52	147	115, 73 m <sup>1</sup> , 108 m <sup>2</sup> (65, 20, 20, 20)	Bronchoscopy Atelectasis with cavity	Poor relaxation* Poor cocaine anesthesia	None	None	
11	M, 27	119	40, 59 m <sup>1</sup>	Bronchoscopy Consolidation left middle lobe	Preoperative† Postoperative—fair**	None	None	
12	F, 32	137	70, 68 m <sup>1</sup> , (50, 20)	Bronchoscopy Hemoptysis	Good**	None	None	
13	M, 16	158	100, 78 m <sup>1</sup> , 117 m <sup>2</sup> (60, 20, 20)	Bronchoscopy Atelectasis left lung	Fair**	None	None	
14	M, 63	149	100, 75 m <sup>1</sup> , 111 m <sup>2</sup> (60, 20, 20)	Bronchoscopy Mass, right upper lobe	No relaxation**	None	None	
15	M, 30	137	100, 68 m <sup>1</sup> , 102 m <sup>2</sup> (50, 20, 20, 10)	Bronchoscopy Lung abscess	Complete relaxation**	Cyanosis, convulsions, coma, apnea	Tachycardia, weak, thready pulse	E and J resuscitator, artificial respiration, carbon dioxide and oxygen, prostigmine, Drinker respirator
16	M, 37	150	80, 75 m <sup>1</sup> (60, 20)	Bronchoscopy Hemoptysis	Poor cocaine anesthesia Some relaxation**	None	None	
17	M, 58	111	35, 55 m <sup>1</sup> , 35	Bronchoscopy Massive atelectasis of lung	No effect	Spasm of larynx, difficulty in breathing	None	
18	M, 62	202	80, 101 m <sup>1</sup> , 80	Bronchoscopy Atelectasis of right lower lobe—emphysema	*	Cyanosis, paralysis of intercostals, slight convulsive twitchings		Resuscitator, prostigmine
19	M, 53	141	70, 70 m <sup>1</sup> (50, 10, 10)	Bronchoscopy Lung abscess	Preoperative† Postoperative**	None	None	
20	M, 63	134	90, 67 m <sup>1</sup> , 100 m <sup>2</sup> (50, 10, 10, 10, 10)	Fair Carcinoma of esophagus	Fair†	None	None	

m<sup>1</sup> and m<sup>2</sup>—Minimum and maximum calculated dose, respectively.

\* Ability to lift the head half way.

\*\* Complete inability to lift the head.

† Ability to lift the head three fourths of way.



tively, and 2 women, 46 and 21 years of age respectively. In this group,  $1\frac{1}{2}$  grains of nembutal and  $\frac{1}{4}$  grain of morphine sulfate with  $\frac{1}{150}$  grain of atropine were given prior to bronchoscopy. The larynx and trachea were anesthetized with 10 per cent cocaine solution. We began with a small dose of 10-20 mg. and increased it to 50 or 60 mg. of the drug.

Because we were unable to obtain the complete physiologic effect, which is evidenced by the inability of the patient to lift his head, we changed our routine in the next series to that suggested for metrazol therapy.<sup>6</sup>

*Case 5.*—Applying this changed technic in a patient who weighed 111 pounds, to whom we administered 45 mg., we were successful not only in producing the full physiologic effect on the muscles which lift the head, but there occurred a complete paralysis of the respiration with cyanosis, thready pulse, and a period of apnea for one and one-half minutes. Artificial respiration was carried out and prostigmine was administered. The patient regained full consciousness in thirty minutes. We concluded that the combined effect of the morphine, nembutal, and curare resulted in an overdepression of the respiratory mechanism. The following week we repeated the procedure on the same patient without morphine. Thirty milligrams produced a full physiologic effect with good relaxation for the bronchoscopy. Therefore we discontinued the use of morphine in the remainder of our series.

Out of the remaining cases the following experiences are of interest.

*Case 9.*—A woman, aged 52, and weighing 187 pounds, was subjected to esophagoscopy for a retroesophageal abscess. She was given 104 mg. of curare before complete relaxation of the head was produced. Shortly after insertion of the esophagoscope, she developed cyanosis, generalized convulsions, and a thready pulse. This was relieved after several minutes of artificial respiration followed by oxygen therapy. Esophagoscopy, without curare, was repeated several days later. No difficulty was encountered.

*Case 10.*—This is the only case in the series in which the dose of 0.75 mg. per pound of body weight was exceeded slightly. In spite of this dosage, the stage of complete relaxation of the head could not be reached. We experienced considerable difficulty in performing the bronchoscopy. This could be attributed to the fact that the cocaineization was inadequate. This experience confirms the observation made in previous studies that satisfactory anesthesia must be obtained prior to the use of curare. The drug has no analgesic effect.

*Case 11.*—This case demonstrates that in some patients the complete physiologic effect may require more than two minutes to manifest itself. Although there was incomplete effect prior to bronchoscopy, full relaxation was present on completion of the procedure.

*Case 15.*—This history is of interest. A total dose of 100 mg. was injected. As in Case 9, the patient developed cyanosis and then progressed to the stage

of convulsions, which began about the face and then became generalized; the chest was fixed and there was no respiratory exchange; coma ensued rapidly. The pulse became rapid and then very weak and thready. The suck-and-blow resuscitator, using carbon dioxide, was applied for about twenty minutes. Coramine, caffeine, glucose and saline, and prostigmine were administered intravenously. There was no satisfactory response and the patient continued in apnea. A flexible tube was inserted into the trachea and artificial respiration was continued, using 10 per cent carbon dioxide and oxygen. After an interval of one-half hour during which there was no improvement, the patient was transferred to a Drinker respirator where he at first received 7 per cent carbon dioxide and oxygen, and then 100 per cent oxygen. The artificial respiration in the Drinker respirator was discontinued after two hours, at which time he began to breathe unaided. Oxygen therapy, by mask, was maintained for three hours more when the laryngeal reflexes returned and the intratracheal tube was not tolerated. The patient's mind was confused for twelve hours, after which full mental and physical recovery followed.

The following paragraph from Cushny's *Pharmacology*<sup>7</sup> is of interest. "In the mammal, eventually the respiration ceases and asphyxia follows but is not betrayed by the usual convulsions owing to the motor impulses being unable to reach the muscles. The heart soon fails from the asphyxia and not from the direct action of the poison."

This seems to suggest that the convulsions noted in our cases may be the result of partial asphyxia rather than direct curare poisoning. However, Goodman and Gelman<sup>8</sup> state: "Curare stimulates the central nervous system. Strychnine-like convulsions are seen after the use of some samples of curare, and picrotoxin-like spasms after others. Ordinarily, however, convulsions are masked by the peripheral muscular depression." In our cases, the convulsions were very pronounced and were generalized. Sollman<sup>9</sup> has stated that "curare may produce a number of side effects resembling nicotine in depressing autonomic ganglia (vagus), and strychnine in stimulating the spinal cord."

*Case 17.*—This is the only example of the development of spasm of the larynx after the administration of the drug and prior to bronchoscopy. Because of massive atelectasis of one lung, considerable breathing difficulty was noted from a dose of 35 mg. Therefore, no additional drug was given.

*Case 18.*—This is a case of atelectasis of the right lower lobe with an emphysematous type of chest. After a dose of 80 mg., the patient developed paralysis of the intercostal muscles with cyanosis and slight generalized convulsive twitchings. The resuscitator was applied with an intratracheal tube in place. Prostigmine was administered. The patient was out of danger in twenty minutes.

*Cases 19 and 20.*—Finally, in the last 2 cases, after injecting 0.5 mg. per pound of body weight, minus 20 mg., we increased each additional application by 10 mg. instead of 20.

This appeared to be a less hazardous method of administration.

## Summary

Twenty cases are presented, in which twenty-one administrations of curare were given. The following points are noteworthy:

1. A satisfactory local anesthesia for endoscopy must be obtained prior to the use of curare.

2. Morphine should not be used prior to endoscopy when this drug is employed.

3. The dosage varies considerably with each patient. We therefore recommend a first injection of 0.5 mg. per pound of body weight, less 20 mg., increasing each injection by 10 mg. Each injection should be prolonged for a period of one to one and one-half minutes. It is advisable that the full two minute period elapse between additional injections.

4. Finally, curare is to be used with caution prior to endoscopy in patients with a marked diminution in tidal exchange. Cyanosis with convulsions occurred in 3 cases of this type, while difficulty in breathing manifested itself in 2 such additional cases.

## Conclusion

Curare relaxes the striated musculature and may be useful in troublesome endoscopies. On the other hand, since it is difficult to determine the exact dosage for each patient and since the effects of the drug are so unpredictable, we do not feel that curare may be used for endoscopy with safety. To obtain relaxation for endoscopic procedures we prefer other measures, such as adequate preoperative medication with barbiturates by mouth and morphine and atropine by subcutaneous or intravenous injection, or by the use of intravenous barbiturates.\*

\* The curare preparation used in this report is marketed under the name Intocostat.

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## Discussion

Dr. M. C. Myerson, New York City.—Whenever a new procedure or a modification is contemplated several things must be considered: first, whether or not it is really necessary; second, whether it is safe; third, whether it is practical; and last, whether it is really of value. When performed by the properly trained man, bronchoscopy is usually done so smoothly that special medication to relax the patient, other than use of one of the barbiturates, should not be necessary. We give our patients 3 grains of nembutal one-half hour before bronchoscopy, as a result of which we rarely encounter any difficulty.

Dr. Silverberg's presentation has impressed you better than I can with the tremendous danger involved in the use of curare for bronchoscopic cases. Whether it is because so many of the patients referred for bronchoscopy have a lowered vital capacity, or whether curare acts differently when the patient is awake, I do not know. I have asked a number of practitioners for the explanation of the comparative safety in the use of curare as an adjunct to general anesthesia. They could not explain why it is so safe in this group as compared to the bronchoscopic cases. I had the privilege of performing bronchoscopy on some of Dr. Silverberg's patients. I was strongly impressed by the suddenness of the paralysis of the intercostal muscles and of the very few seconds which elapsed between the patient's inability to lift his head and the appearance of this paralysis. If it had not been for the presence of an expert such as Dr. Ansbro, we would have been in a serious dilemma. If, after this report, anyone will permit the use of curare for bronchoscopy, I would urge him to be sure to have an anesthetist and his resuscitating apparatus present.

The use of curare for bronchoscopy is not practical because it takes at least twenty minutes for the proper administration of the drug, a great majority of bronchoscopies can be performed in much less time than twenty minutes.

Furthermore, I was impressed, during bronchoscopy, with the fact that whereas the bronchoscope readily passed through the larynx before curare was administered, difficulty was encountered because of spasm of the vocal cords which had not existed before. Even if the use of curare was completely free of danger, the number of bronchoscopic cases in which difficulty is encountered because of lack of relaxation is so small as to nullify the value of such an adjunct. I would summarize my remarks by saying that if bronchoscopy had to be done with curare, I would prefer not to perform bronchoscopy.

## Correction

In the case report "Unusual Contacts in Early" instead of "1943"—Editor

## INDEFINITE DEFINITIONS

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Hobo News

# FUNDAMENTAL CHARACTERISTICS OF THE DIFFERENT MEDICOLEGAL SYSTEMS IN THE UNITED STATES

B. M. VANCE, M.D., New York City

THE subject which I discuss in this paper is of considerable importance to the medical profession and to the community at large, because it is a brief appraisal of the different medicolegal systems under which suspicious and violent deaths are investigated by the county governments in the United States. In most counties these investigations are under the supervision of an elected official known as the coroner, who has a minor judicial status. In a few communities such duties are assumed by physicians known as medical examiners, who are appointed officers of the county government, and who conduct their investigations on a totally different basis from those of the coroners. In recent years there has been a tendency for an increasing number of communities to look with dissatisfaction on the coroner system in their midst and to consider a change to some form of the medical-examiner system.

A consideration of these different systems is, therefore, a matter of something more than academic interest, because with the growing complexity of civilization an efficient method of investigating violent and suspicious deaths becomes highly desirable. Accordingly, it is my purpose to review briefly the history and present status of these different systems in an endeavor to discover which one is best adapted for its purpose.

## Coroner System

The coroner was originally an official with magisterial powers appointed by the king to represent the English Crown in a certain district. The office dated from about the period of the Norman conquest, and its incumbents were men of high station and enjoyed great prestige. Their duties were to see that the Crown obtained due recognition in cases where money was involved, as in the discovery of treasure or in the investigation of crimes punishable by fines. If any violent or suspicious deaths occurred in his jurisdiction, the coroner was informed, and a jury was summoned from the neighborhood; the coroner and jury then viewed the remains, and the coroner made an investigation into the circumstances of death. If the evidence was sufficient to charge a person with the crime of homicide, the duty of the coroner was to confiscate the chattels of the accused

for the Crown. In like manner, if a person suspected of a crime became a fugitive, whether guilty or not, the coroner was empowered to declare him an outlaw and seize his goods and chattels. Even in cases of misadventure, if a domestic animal or a movable object was instrumental in causing the death of a person, it was forfeited to the Crown under the name of a deodand; similarly, all the property of a suicide was seized as a deodand. Incidentally, deodands were only abolished in the nineteenth century under the impact of the rising industrial age, when it was found inconvenient to confiscate under that name a railway train which had killed a man by misadventure. The foregoing is sufficient to explain the interest of the early coroner in the dead body, for it was always a possible source of revenue.

As the centuries passed, the office of coroner declined in prestige, all his important duties fell away from him, and only the power of holding inquests on dead bodies remained. The office, however, preserved its vitality and with the extension of colonies of Englishmen to other parts of the world, the institution of coroner was transferred with them and to this day is found in the British Commonwealths and in most of the States of the American Union. Both in England and in the other countries the coroner, modified more or less from his prototype of medieval times, still exercises the same function of determining the cause of death by virtue of a judicial process which functions, in many cases, unhampered by any contribution from the science of medicine.

The coroner in most parts of the United States is a county official elected by popular vote for a term of office which varies from two to four years. Ordinarily he is not required to be a lawyer or a doctor, and the only qualification necessary is that he should be eligible for a place on the ticket of the predominant political party. Some states, like Louisiana, have laws which stipulate that the coroner should be a graduate of a medical school and be licensed to practice in the state. In any event, the office is a minor judicial one and in many cases is under the thumb of the local political machine. It is usually compelled to work with insufficient funds, so that it would be incapable of improvement even if the incumbent were impelled by a sincere desire for reform.

When the coroner receives notification of a suspicious death in his jurisdiction, he or his representative visits the scene of death, inquires

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 9, 1944.

From the Office of the Chief Medical Examiner in the City of New York.

into the circumstances, and decides whether to release the body after a mere examination or to hold an autopsy and an inquest. The inquest is a court hearing held before a jury or by the coroner as a magistrate without a jury. Testimony is taken under oath, and at the end of the hearing, either the jury or the coroner decides how death occurred, whether by natural causes, misadventure, suicide, or homicide. Medical testimony may be taken or the report of the autopsy may be introduced into the record, but the coroner has the discretionary power to disregard such evidence. As the result of testimony given in his court the coroner can order the arrest of any person or persons implicated in a homicide and hold them for the higher courts.

The above statement is, of course, an oversimplified description of the coroner system, for in some localities there are officials known as coroners who do not perform their duties in the way I have outlined. It is not my intention to inflict unjust criticism upon those who are worthy or even to indict particular coroners' offices in detail, but I do wish to bring the underlying principle of the coroner system up for a searching examination. The theory upon which the institution of the coroner is based is fallacious; namely, that a local magistrate, usually blessed with doubtful qualifications for his duties, can direct the medical investigation, conduct a judicial inquiry, and in the end determine the cause of death in a given case. The determination of the cause of death is a medical problem and should be the concern of the medical profession. It is only in comparatively recent times that the coroner has sought medical aid for this purpose, and even then he can disregard it. As an instrument for determining the cause of death the coroner's inquest cannot be regarded as efficient.

Is there anything to be said in favor of the coroner system? No, not as it is constituted at present. The poor quality of the typical coroner's office and the misdirected aim of the inquest can be abolished without causing an undue sense of loss. There is, however, an argument for the establishment of the office of magistrate who has investigative as well as judicial functions and can carry his duties to the scene of a crime, where he can gather evidence at first hand. He would not have any control over the medical investigation, but would confine his energies to sifting the other evidence. Such an official would be similar to the procurator fiscal in Scotland or the magistrates in the Republic of Panama. It should be noted that those communities which have adopted the medical examiner system have placed the judicial powers of the coroner in a magistrate.

### Medical Examiner System

The character of this system can be best appreciated by considering its historic development. Its prototype is to be found in the Roman Empire of antiquity, where the *archiatri populares* were official physicians appointed by the emperor for certain districts, principally to treat the indigent sick. There is not any record to indicate that these physicians had any medicolegal functions.

A lineal development from the ancient *archiatri* were the town physicians in Europe during the Middle Ages, who served the community as medical practitioners, army surgeons, police doctors, and medicolegal experts. In the statute laws of the northern Italian republics from the thirteenth to the sixteenth centuries, there are qualifications specified for physicians who were to be considered expert in legal medicine. The principal duties of such experts were the visual inspection of wounds on the living and dead body and the reporting to the authorities as to whether these wounds were mortal or not. Autopsies, however, were not performed in fatal cases of this type. They also investigated suspected cases of poisoning, examined psychopathic individuals, and gave testimony in the criminal and civil courts. There is not any indication that they performed any autopsies as a part of their official duties. Here the true beginning of a medicolegal system makes its appearance, for here the state recognizes the value of medical knowledge for the law.

The "*Constitutio Criminalis Carolina*," promulgated by the Emperor Charles V, appeared in 1530, and increased the importance of legal medicine by announcing that medical evidence must be produced as part of the proof in criminal court actions involving cases of infanticide, abortion, fatal wounds, poisonings, and similar conditions. The statute did not stipulate, however, that an autopsy should be performed on the dead body of the victim of such crimes. In 1562 Ambroise Paré made what was probably the first judicial autopsy and at the end of the sixteenth century the autopsy in medicolegal cases became general. With the increasing complexity of European civilization in the nineteenth century, the authorities were forced to improve the administration of legal medicine and this led to the rise of medicolegal institutes all over the continent in the larger centers of population.

The system in the modern European cities is based on the theory that the police and the judiciary investigate the circumstances of death in all criminal cases, and then send the body to the institute for autopsy. Cases of death not in this category are disposed of through other channels. The medicolegal experts rarely visit the scene

where the body was found, and are mainly responsible for the performance of the autopsy along with such chemical and microscopic examinations as may be necessary to establish the cause of death. In addition, the medicolegal institutes are occupied with a number of diverse activities, such as: (1) interpretation of laws regulating the practice of medicine; (2) psychiatric examinations of individuals involved in court procedures where mental sanity is a point at issue; (3) examination of individuals whose claims for state insurance are disputed; (4) alcohol determinations on the blood and urine of individuals involved in traffic accidents; (5) blood-group examinations in paternity cases; and (6) police-laboratory examinations. Such heterogeneous pursuits are a heritage from the days when medicolegal science was less complex and experts assumed all the tasks allotted them, but at present they must be an administrative headache to the head of the institute.

The present method of medicolegal investigation in Scotland deserves a brief description, for it is derived from France and has no similarity to the coroner system in England. Each district in Scotland is served by a magistrate called the procurator fiscal, who has the duty of investigating suspicious and violent deaths. He visits the scene and has the power of calling in the police and directing their activities, and of summoning witnesses and taking their testimony. If the case seems to be homicidal, he can call in two physicians to examine the body and to perform an autopsy after the proper authorization is obtained. His final report is submitted to the Crown Office of Scotland for disposal.

The medical examiner systems in the United States were adopted in a few states and counties after these communities had rid themselves of their inadequate coroner systems. Massachusetts instituted her medical examiners in 1877 and New York City established the Office of the Chief Medical Examiner in 1918. These systems have this in common with the European medicolegal institutes: that they recognize that the cause of death in any case under investigation must be determined by a medical man, but they differ in two important respects from the European organizations. The first difference is that the American medical examiners visit the scene of death and begin their investigations there, so that the chance of losing important medical evidence is somewhat reduced. The second difference is that they are principally concerned with finding the cause of death, and they are not bothered with the miscellaneous activities which trouble the European institutes. The medical examiner systems in this country are based either on the Massachusetts model or on the one oper-

ating in New York City, and since these differ in some important respects, I will discuss them in greater detail.

The Massachusetts medical examiners are appointed by the Governor with the advice and consent of the Council for terms of seven years, to serve in certain districts. They investigate all deaths which are supposed to have occurred from violence and perform autopsies on being authorized by the district attorney, mayor, or selectmen of the district. Without such consent the medical examiner issues his death certificate only after a simple external examination of the body. Provision is also made for all necessary chemical examinations.

The Massachusetts medical examiner system is open to several criticisms. The first is implicit in the method of appointment of the medical examiners, which is practically under the control of the Governor, and he is not compelled by any provision in the law to select the best-qualified person to fill the position. Second, the individual medical examiners perform their duties in such a way that they rarely come in contact with other medical examiners and so are deprived of mutual aid and criticism. The third and most serious disadvantage of the system is the power of the district attorney to decide whether or not the medical examiner shall perform an autopsy in any particular case. Unless the prosecutor is a man of wide experience, he would not always realize that some types of homicide cannot be detected without an autopsy, and that in refusing to allow one he might create difficulties for the work of his own office. The same criticism can be urged with equal applicability against the medicolegal systems of Scotland and the continent of Europe, where the legal authorities can, to a certain extent, direct the medical investigation.

The organization of the Office of the Chief Medical Examiner in the City of New York is quite different. The Chief Medical Examiner is the head of the Office and he is appointed by the Mayor from the classified Municipal Civil Service list. The Chief is enjoined to appoint qualified deputy and assistant medical examiners and other employees from such Civil Service Lists as may be provided. The law stipulates that the chief medical examiner is to be a "skilled pathologist and microscopist" and that the medical examiners on his staff are to have the same qualifications. The essential character of this office is that it carries on its duties as an organization which is under the direction of a responsible head.

When the individual medical examiner is notified of a case which requires his attention, he goes to the scene where the body was found and starts his investigation. The cases with which he is concerned are those of victims who have

died as a result of criminal violence, of suicide, of casualty, or suddenly while in apparent health, or when unattended by a physician, or in prison, or in any suspicious or unusual manner. The examiner inquires into the circumstances of death, looks over the body, and then may issue a certificate of death if he believes that the cause of death can be determined beyond a reasonable doubt and that the case is not a suspicious one. If he is of the opinion that an autopsy is necessary, he or some other medical examiner performs an autopsy. The autopsy findings are written up in the form of a report and are filed with the rest of the record. Chemical, microscopic, and bacteriologic examinations are also carried out, if the circumstances of the case make them necessary.

As far as the individual medical examiner is concerned, he is made sole judge of how he shall conduct his investigation in determining the cause of death, which means, specifically, whether or not an autopsy shall be performed in the case under consideration. The success or failure of the New York type of the medical examiner system depends overwhelmingly on the qualities of this individual medical examiner. He must be a doctor of high professional ability and unquestioned integrity, otherwise the work of the office will suffer in its quality.

As far as the actual results achieved by the New York City system, it can be said that it has worked satisfactorily in New York and in Essex County, New Jersey. The system is not perfect, but perhaps may be called less imperfect than other systems. Its basic principle indicates the proper goal at which all medicolegal organizations must aim in order to give the best service to the public, and in the future the most successful medical-examiner system will probably be patterned after this model.

## Discussion

Dr. Floyd M. Winslow, Rochester—Two systems of investigating sudden and violent deaths are in use in New York State at the present time; one is the system of investigation by a coroner who is an elected official; the other, investigation by a medical examiner appointed by a city government. The

medical examiner system prevails in a few large cities of the state, while the coroner system exists throughout the rest of the counties of the state. The medical examiner system is a modern development in this field and has existed in this state for the past twenty-six years.

The law which governs the function of a coroner in this state is unsatisfactory because it is vague and loosely written; if one desires to know the law which governs the actions of the coroner he must carefully search the *Civil Code*, finding references to the office of coroner in many different sections of the *Code* with no complete outline of the powers and duties of the coroner in any one chapter. Occasionally legal action is brought for an unauthorized autopsy, sometime later followed by an additional legislative enactment applying to the issue involved. This group of enactments then becomes the law governing the coroners of the State.

While the introduction of the medical-examiner system in some of the larger cities of the state, beginning in 1918, is a modern development in the conduct of this office, there is always a tendency to failure to keep abreast of the times in the laws which govern this office in the state of New York.

The principal objections to the coroner system in this state are:

1. A tendency to political control of the elected coroner and his staff.

2. Inadequate and antiquated methods of conducting the work of the coroner's office. While the larger cities of the state are called upon to provide adequate facilities for the medical examiner to handle the large bulk of this work, the less frequent

It is desirable that every county of this state have the services of a competent medical examiner with adequate laboratory facilities for carrying on incidental serologic, bacteriologic, histologic, and toxicologic investigations.

In consideration of the successful conduct of the medical examiner system in some of the cities throughout the state for the past few years and conversely in consideration of the necessity of improving the functioning of the coroner system as used throughout the rest of the state it would seem that the time has come when a thorough state-wide survey is in order for the purpose of arranging a more satisfactory method of investigating suspicious and violent deaths throughout the State.

## COMMITTEE ON MEDICAL RESEARCH BEGINS PUBLICATION

The Committee on Medical Research of the Office of Scientific Research and Development has recently begun publication of a weekly journal entitled *Summary of Reports Received by the Committee on Medical Research*. Circulation of the publication is restricted to selected Medical Corpsmen in the United States, Canada, and Great Britain. The journal is being edited and published

by the Records Section of the Committee, the work of which is directed by Dr. Kenneth B. Turner, who is on leave of absence from the College of Physicians and Surgeons, Columbia University. Dr. Turner is assistant professor of medicine and assisting physician to the Presbyterian Hospital.—*Released from the Office of the Surgeon General, August 8, 1944*

# AN INTRADERMAL REACTION AS AN AID IN THE DIAGNOSIS OF GRANULOMA INGUINALE

BORRIS A. KORNBILTH, M.D., F.A.C.S., New York City

A TISSUE antigen was prepared from an acute lesion of granuloma inguinale of six weeks' duration in which Donovan bodies were especially numerous and easily demonstrable on smear with Wright's stain (Fig. 1A). The extensive distribution of Donovan bodies in the resected specimen was easily demonstrated in paraffin tissue section stained by the Giemsa method.

The test material was prepared in the following manner: A fair-sized piece of tissue was removed and triturated in a small amount of normal saline in a sterile mortar. The triturated material was diluted so that it would be possible to aspirate it through a 26-gauge needle. It was then bottled and heated at 60 C. for two hours on one day and left in the icebox overnight. It was heated at 60 C. for one hour on the following day. After this procedure, the material was tested for sterility both aerobically and anaerobically and was found to be sterile. Smears showed no organisms or Donovan bodies. They did show amorphous, pink-staining debris. It must be noted that this material was not filtered. It is quite certain that the tissue was originally contaminated with organisms present upon the skin—staphylococci and streptococci. These organisms did not interfere with the quality or effectiveness of the antigen. The manner of preparation is similar to that used in making Frei antigen for lymphogranuloma venereum.

A series of 19 proved cases of granuloma inguinale and another series of control cases were injected intradermally with 0.1 cc. of this test material and the results were observed in forty-eight hours. A negative result showed no evidence of reaction in the skin. A positive result consisted of a tender nodule; an infiltration about 5 to 8 mm. in diameter, surrounded by an erythematous halo of varying size.

The results of these tests are shown in Charts I and II.

The explanation of the "false negative" or "false positive" tests requires further study.

## Histopathology of the Granuloma Inguinale Intradermal Reaction

An oval portion of skin containing a positive intradermal reaction was excised three days after

injection of the test material into a definitely proved case of granuloma inguinale. Sections were stained with hematoxylin-eosin and Giemsa. The microscopic study was made by Dr. Sadao Otani. The essential picture was that of a diffuse epithelioid cell reaction. Epithelioid cells were present diffusely throughout the corium. They assumed a characteristic pattern and were arranged in spheres of varying sizes. The characteristic feature was that of an epithelioid nodule or sphere. The periphery consisted of more compactly arranged layers of epithelioid cells, while the centers were made up of an interlacing, more loosely arranged network of epithelioid cells. Within these clusters there were a moderate number of lymphocytes and plasma cells. There was no evidence of acute inflammation. The reaction was conspicuous because of the absence of polymorphonuclear leukocytes. There was no evidence of necrosis (Fig. 2A). Some giant cells were present (Fig. 2B). Donovan bodies were not found in the intradermal reaction.

A review of the sections of tissue taken from an acute lesion of granuloma inguinale, containing numerous Donovan bodies in the monocytes, revealed similar epithelioid structures in places. These structures were modified by the presence of acute inflammatory changes as a result of secondary infection. The epithelioid structure was obscured by an exudate consisting of polymorphonuclear leukocytes, lymphocytes, and plasma cells (Fig. 1B); giant cells and fresh granulation tissue were likewise present.

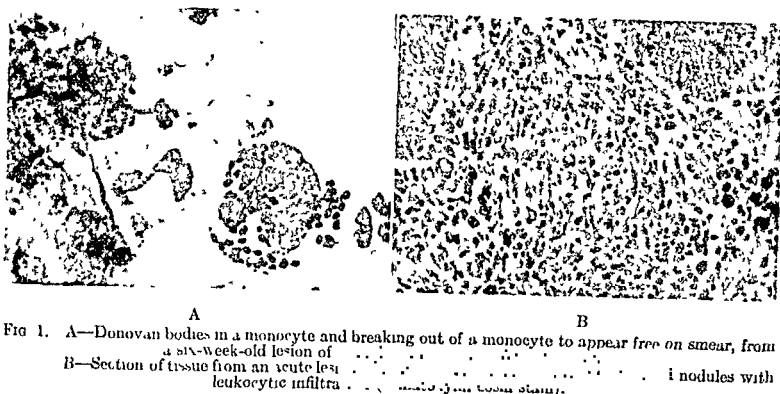
It is important to observe that the descriptions of the histopathology of granuloma inguinale, up to the present, are consistent with a description of nonspecific inflammation due to secondary infection with contaminating organisms which accompany these open lesions. The histologic reaction as seen in the intradermal tests is uncontaminated and gave a lead to a similar picture in the original granuloma inguinale lesions. There is thus present a histopathologic correlation between the actual lesions and the confirmatory skin test of granuloma inguinale.

An analogous correlation was shown to exist in the case of lymphogranuloma venereum between the histology of the Frei test and the histopathology of the lymph nodes.\*

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 11, 1944.

From the Bureau of Social Hygiene, Department of Health, City of New York, and the Department of Pathology, Mt. Sinai Hospital, New York City.

\* Kornblith, Borris A.: Surg., Gynec., & Obst. 63: 99 (1936).



A

B

FIG. 1. A—Donovan bodies in a monocyte and breaking out of a monocyte to appear free on smear, from a six-week-old lesion of granuloma inguinale.  
B—Section of tissue from an acute lesion of granuloma inguinale showing leukocytic infiltration and nodules with leukocytic infiltration.



A

B

FIG. 2. A—Granuloma inguinale intradermal reaction showing characteristic epithelioid sphere with many lymphocytes.  
B—Granuloma inguinale intradermal reaction showing giant cells in a mesh of epithelioid cells.

CHART I  
AN AID IN THE DIAGNOSIS OF GRANULOMA INGUINALE

NO. CASE	EPITHELIUM	GR. ING.	LEU.	PL. ERY.
1. J.H.T.	Gr. Ing.	+	0	0
2. J.H.T.	"	+	0	0
3. N.H.	"	+	0	0
4. P.D.	"	+	0	0
5. W.H.	Gr. Ing., Leuc.	+	0	0
6. C.H.	"	+	0	0
7. M.N.	Gr. Ing., Con., Leuc.	+	0	0
1. L.L.	Gr. Ing.	+	0	+
2. C.W.	"	+	0	+
3. L.C.	"	+	0	+
4. W.W.	"	+	0	+
1. A.H.	Gr. Ing.	+	+	+
2. W.D.	"	+	+	+
3. P.M.	"	+	+	+
4. E.V.	"	+	+	+
5. V.H.	Gr. Ing., Ca	+	+	+
6. H.H.	Gr. Ing., Cr.	+	+	+
1. E.B.	Gr. Ing., Leuc.	0	+	+
2. J.T.	Gr. Ing., Leuc.	0	+	+

CHART II  
AN AID IN THE DIAGNOSIS OF GRANULOMA INGUINALE

NO. CASE	DIAGNOSIS	GR. ING.	LEU.	PL. ERY.
1. J.C.	Labial abscess	0	0	0
2. H.H.	Hemorrhoids	0	0	0
3. L.J.	Acanthosis	0	0	0
4. W.S.	Carcinoma	0	0	0
5. A.M.	Cervical ulcer	0	0	0
6. H.F.	Herpes	0	0	0
7. A.D.	Adenitis	0	0	0
8. R.N.	Lymphogranuloma	0	0	0
1. H.D.	Chancroid	0	0	0
2. C.S.	"	0	0	+
3. M.W.	"	0	0	+
4. L.D.	"	0	0	+
5. M.C.	"	0	0	+
6. G.V.	"	0	0	+
7. M.H.	"	0	0	+
1. A.G.	Lymphogranuloma	0	+	0
2. A.G.	"	0	+	0
3. W.P.	"	0	+	0
4. H.C.	"	+	+	0
5. H.C.	"	+	+	0



TABLE 1

<i>Cases of Five or More Years' Duration with Normal Arterial Findings</i>						
Name	Sex— Race	Age	Duration	Coro- naries	Aorta	Kidney Arteries
H. P.	F, W	17	5 yrs.	Normal	Normal	Normal
P. H.	F, W	25	10 yrs.	Normal	Normal	Normal
C. H.	M, B	27	5 yrs.	Normal	Normal	Normal
T. L.	M, W	49	7½ yrs.	Normal	Normal	Normal
E. S.	F, W	51	15 yrs.	Normal	Normal	Normal
D. P.	M, W	59	5 yrs.	Normal	Normal	Normal
H. M.	F, W	73	5½ yrs.	Normal	Normal	Normal
<i>Cases of Short or Uncertain Duration with Normal Arterial Findings</i>						
W. F.	M, W	7½	?	Normal	Normal	Normal
E. W.	F, B	18	?	Normal	Normal	Normal
M. D.	F, W	21	?	Normal	Normal	Normal
R. Mc.	F, W	22	?	Normal	Normal	Normal
W. J.	M, B	28	?	Normal	Normal	Normal
M. K.	F, W	42	?	Normal	Normal	Normal
W. McF.	M, W	46	1 year	Normal	Normal	Normal
F. R.	M, W	46	?	Normal	Normal	Normal
L. H.	F, B	50	6 months	Normal	Normal	Normal
R. C.	F, B	52	1 year	Normal	Normal	Normal
G. C.	M, W	54	?	Normal	Normal	Normal
A. C.	F, W	54	4 yrs.	Normal	Normal	Normal
A. L.	F, W	55	3 yrs.	Normal	Normal	Normal
M. B.	F, W	52	?	Normal	Normal	Normal
A. O.	F, W	56	?	Normal	Normal	Normal
G. B.	M, W	59	6 months	Normal	Normal	Normal
G. D.	F, B	58	?	Normal	Normal	Normal
R. B.	F, W	65	?	Normal	Normal	Normal
I. H.	M, W	70	?	Normal	Normal	Normal
S. N.	M, W	66	?	Normal	Normal	Normal
<i>Cases of Five or More Years' Duration with Only Moderate Changes in One of the Three Points of Investigation</i>						
K. B.	F, W	54	5	Moderate	Normal	Normal
T. G.	F, W	63	28	Normal	Moderate	Normal
W. A.	M, W	64	8	Normal	Normal	Positive
M. H.	F, B	74	20	Normal	Moderate	Normal

rence followed no pattern, being scattered throughout the various ages. They were mostly found in those cases showing marked changes in either the coronaries or in the aortas, though this was not necessarily true.

The severity of the diabetes was very difficult to determine. Over one-third of the patients were brought into the hospital in a comatose state and many died without regaining consciousness. A number presented language difficulties and a number were mentally irresponsible. Again, so many had associated severe infections that our estimation of the tolerance would be unreliable. Nevertheless, of the 45 patients there were 20 who either gave a history of mild diabetes or were proved to have mild diabetes in the hospital. There were 4 who gave a history of moderate diabetes and one who had severe diabetes but had been well balanced for five years, taking between 80 and 90 units of protamine zinc insulin per day.

There seemed to be no relationship between the mild cases and the degree of involvement of the arteriosclerosis. The patients exhibited an almost equal number of normal, moderate, and severe cases regardless of age.

## Discussion

Arteriosclerosis is still the unknown. The cause of this widespread and serious vascular disease is as yet one of the mysteries of medicine.

Because diabetes is the only known abnormality in the body that has any practical influence on the progress of the sclerotic changes in the arteries, we look to students of diabetes for some light on the subject.

While there is ample evidence at hand to show that diabetes speeds up the progress of arteriosclerosis, its full role is not understood. It is generally conceded that it increases the total amount of sclerosis in the arteries of those over 40 years of age, increases the severity of the sclerosis, increases the danger of occlusive accidents, and adds ten years to the individual's actual age. We have recently confirmed these observations in a series of 193 autopsies on diabetics and 2,250 on nondiabetics.<sup>1</sup>

Every patient with diabetes, however, does not develop arteriosclerosis. Warren<sup>2</sup> reports he has collected 13 cases that were free of any changes at postmortem examination. Out of 193 diabetics coming to autopsy we found 28 that gave no evidence of sclerosis. Warren and Root thought that the excessive sclerosis in the diabetic was related to the duration of the disease. Warren in 1930<sup>3</sup> said that he had never seen a diabetic of five years' duration who was free from arteriosclerosis at autopsy, regardless of age. In his 1938 edition<sup>2</sup> he modified this statement by saying that he had since found four exceptions. We noted 7 cases with durations of five or more years without involvement,

TABLE 2.—INVOLVED CASES ARRANGED ACCORDING TO THE DURATION OF THE DIABETES

Name	Sex— Race	Age	Duration	Coronaries	Aorta	Kidney Arteries
V. B.	F, B	50	5 yrs.	Marked (old thrombi)	Normal	Positive
K. B.	F, W	54	5 yrs.	Moderate	Moderate	Normal
A. L.	F, W	57	5 yrs.	Marked	Marked	Positive
M. D'A.	M, W	57	5 yrs.	Normal	?	Normal
N. B.	M, W	70	5 yrs.	Marked (old thrombi)	Marked	Positive
F. S.	M, W	62	6 yrs.	Moderate	Marked	Positive
D. S.	M, W	67	8 yrs.	Marked	Marked	Positive
H. W.	M, W	77	7 yrs.	Moderate	Moderate	Positive
J. W.	F, B	55	8 yrs.	Marked	Moderate	Normal
D. A.	M, W	57	8 yrs.	Moderate	Marked	Positive
A. C.	F, W	70	8 yrs.	Moderate	Marked	Normal
R. R.	F, W	67	8 yrs.	Marked	Marked	Positive
J. N.	F, W	70	8 yrs.	Marked	Marked	Positive
H. S.	F, W	80	8 yrs.	Marked	Marked	Positive
N. R.	M, W	57	9 yrs.	Marked (recent thrombi)	Marked	Positive
A. C.	F, W	63	10 yrs.	Moderate	Marked	Positive
S. L.	M, W	65	10 yrs.	Moderate	Marked	Normal
F. L.	M, W	62	10 yrs.	Marked	Normal	Normal
C. S.	M, W	73	10 yrs.	Normal	Marked	Positive
A. B.	F, W	65	12 yrs.	Marked	Marked	Positive
I. C.	F, W	62	12 yrs.	Marked (old thrombi)	Moderate	Positive
M. C.	F, W	70	12 yrs.	Moderate	Moderate	Normal
M. B.	F, W	54	13 yrs.	Moderate	Moderate	Positive
M. F.	F, W	47	14 yrs.	Moderate	?	Positive
L. S.	M, W	53	14 yrs.	Marked	Marked	Positive
T. M.	F, W	68	14 yrs.	Moderate	Moderate	Positive
M. S.	F, W	60	15 yrs.	Marked (old thrombi)	Marked	Positive
B. P.	M, W	63	15 yrs.	Marked	Marked	Normal
R. A.	F, W	65	15 yrs.	Marked	Marked	Positive
W. R.	M, W	67	16 yrs.	" "	Normal	Positive
M. L.	M, W	74	16 yrs.		Marked	Normal
M. L.	M, W	58	17 yrs.		Normal	Positive
H. H.	M, W	53	20 yrs.		Marked	Positive
F. S.	F, W	71	20 yrs.	Moderate	Marked	Positive

and in addition there were 4 more that presented only moderate changes at one of the three points. Root<sup>4</sup> concluded after a study of the aortas in cases of less than one year's duration that there was little difference in the involvement of the diabetic and the nondiabetic of similar age. Yet in those cases of diabetes of long duration he noted much greater severity than in nondiabetics of the same age. It impressed him that the duration of the diabetes regulated the degree of changes in the aorta. Again<sup>5</sup> he was influenced by the extreme degree of changes in a group of diabetics 70 years old or over with diabetes of long duration.

Of course, as is frequently pointed out, diabetes is a disease largely of later life. It parallels, therefore, the onset of arteriosclerosis. We accept the fact that arteriosclerosis is the accompaniment of age in the general populace and that it increases with each succeeding decade. This makes age a pronounced factor and one that must be considered in any appraisal of arteriosclerosis.

There are, however, as shown by Ophuls,<sup>6</sup> individuals dying in every decade up through the nineties who fail to show arteriosclerosis at postmortem. Hence, age cannot be considered a positive factor in the production of sclerotic arteries.

As we have shown, patients with diabetes of reasonable duration may escape arteriosclerosis even though they are of the age in which it is

admittedly active. Such cases are resistant to the combined action of two recognized factors. They must have an inherent resistance to these factors or some antisclerotic factor is in evidence. It is suggestive that the nondiabetics who are resistant to the age factor may be resistant as well to the diabetic factor.

Because all three of our patients under 30 years of age were free from changes, we feel that the duration of the diabetes is not an important factor in youth. This parallels the generally accepted finding that arteriosclerosis is rare in the first few decades in the nondiabetic.

Our data regarding the severity of the diabetes are inconclusive, but the fact that the patients with severe cases might have little change in the arteries and the mild ones severe changes has led us to the conclusion that the degree of the diabetes is immaterial in the progress of the sclerosis.

### Conclusions

1. Arteriosclerosis is a very common though not a consistent finding in cases of diabetes of five or more years' duration.

2. Diabetes of long duration is not a positive factor in the production of arteriosclerotic changes.

3. Age is not a positive factor in the production of arteriosclerotic changes.

4. The combined action of the diabetic and

the age factors does not necessarily produce arteriosclerosis, even in cases of long duration.

5. It is possible that those individuals that are resistant to the age factor are likewise resistant to the diabetic factor.

6. The diabetic factor has less effect on the arteries in youth than in later decades.

7. The severity of the diabetes seems to be of no importance in the stimulation of arteriosclerosis.

## References

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## AN OPEN LETTER

To: Lt. (j.g.) Marshall Dann, U.S.N.,  
Former Sports Writer—*Detroit Free Press*,  
Somewhere in the Pacific.

Dear Marshall:

We thought we would write you an open letter to let you know about the latest extra edition out of Washington. A senate committee has just been told that the American Youth (that includes you) are "soft and flabby." We always thought there was something wrong with you.

As we remember, they rejected you first because you had high blood pressure. Well, we proved them wrong on that one. What normal boy's blood pressure wouldn't rise standing around with a bunch of white, black, and yellow youths in the nude in an ex-American Lady Corsét factory. But we did find a hernia the Army had overlooked so they turned you down for that the next time. Well they couldn't do that to you so you had an operation. By some miracle, those soft and flabby muscles held and four months later you were in the Navy. We don't know what the Navy did with that softness and flabbiness but the last we heard of you, you were piloting boats bringing up food to our fighting men on the islands in the South Pacific with as much energy as you used to use hunting good grub in this burg of ours. All this showed the manliness and courage typical of American youth and you were only one of thousands who had similar experiences. Just soft and flabby guys.

Now Marshall, you know the American youth. You were no great guns as an athlete (except for a lousy game at golf) but at Michigan State you were a special reporter for the *Free Press*. You knew the athletes and the student bodies at State and the U. of M. and you met college teams from all over the country. Weren't those fellows a bunch of pansies? So soft and flabby with a skin you loved to touch but you had to be careful there was no static spark in that touch or it might set off some dynamite. Then you came down to Detroit as sports writer for the *Free Press* and, as such, covered the high school and sandlot sports. Those Cooley and Catholic Central football teams were a bunch of cream puffs. Those Firemen Midget baseball teams were puny little devils. And those track and basketball boys certainly showed off their malnutrition in those skimpy suits. But they played the game and took the bumps and didn't shed any tears except in the chagrin of defeat—soft and flabby.

Sure, they say these were the athletes. But how would you have liked to risk your neck by calling the U. of D. High rooters a bunch of dirty Irish or the Hamtramck rooters skunks or the Western

rooters river rats and so on down the line. Even though they got their grade-school physical training under a skinny-legged, bespectacled female gym director, they could still stand up for their rights and their softness and flabbiness wouldn't have been much help to you if you incited them.

You bet those kids were soft and flabby. They'd thumb a ride for two blocks to get a field to play all afternoon. In place of tough muscle-bound bodies, they had brains and ingenuity. Even some of those turned down as neurotics outsmarted the psychiatrist. While the rest of the world hiked, they went for a ride in a shiny automobile. They had brains and ingenuity along with their softness and flabbiness. Every 14-year-old had the coordination of eyes, ears, mind, and soft and flabby muscle that could take the old bus down the road at 60 or 80 miles an hour. They knew no fear. Besides, if that auto didn't move, they could take it apart and find out why. Why work if you can get someone else or a machine to do it for you? That is soft and flabby.

Why walk if you can ride? Remember the year State played in the Orange Bowl and you didn't have the dough to get to Miami? Did you start walking? No, you thumbed a ride both ways, had a swell trip, and came back to Lansing with more money in your pocket than when you started. Your soft and flabby muscles didn't get you there but your brains and ingenuity and personality did. Just another typical trick of our soft and flabby American youth.

Now, most of those boys you knew or wrote about are in the military service and most of them volunteered and didn't wait for the draft. A few weeks of military training toughened up the soft and flabby body. But the American youth didn't take Sicily, Normandy, Guadalcanal, Tarawa, or Saipan with their bodies alone. They used their brains and ingenuity. One can train soft and flabby muscles in a few weeks but it takes years to train a mind. You have seen them in action, Marshall, so you know.

Col. Rowntree can have the regimented goose-stepping German, the bespectacled Jap, or the sundried Italian but you and I will put our money on that soft and flabby guy we call the American youth.

Well, Marshall, you're in the Navy and I know you can't answer this until the duration is over. Just give those Tojo's hell for us poor 4F's at home and take care of a good, game guy named Marshall. When another extra comes out from Washington, we will let you know the *Bull*.

Sincerely yours,  
W. B. Harm, M.D.,—*In Detroit*  
*Medical News*, Aug. 7, 1944

## MODERN TREATMENT OF VARICOSE VEINS

With Special Reference to the Use of Sylناسol\* as a Sclerosing Agent

WILLIAM M. COOPER, M.D., F.A.C.S., New York City

THE literature of the past decade with respect to the use of the salts of the fatty acids in the obliterative treatment of varicose veins, is voluminous. This paper details my experience with sylناسol in the sclerosing treatment of varicose veins during the past five years, both in my clinic at the New York Polyclinic Medical School and Hospital and in private practice.

Sylناسol is a 5 per cent solution of the sodium salt of the fatty acids of a vegetable oil extracted from the seed of the psyllium group. I have used it alone or following preliminary high ligation and division of the saphenous veins when such an operation is indicated. The indications for preliminary high ligation and division of the saphenous vein, or veins, are given in detail below.

No attempt will be made to give statistical tables, since the writer is primarily interested in the practical clinical application of the material used in this study. The observations and conclusions are based upon results obtained in a large clinic and practice.

In a paper<sup>1</sup> published in the *American Journal of Surgery* in 1933, I discussed the action and uses of sodium morrhuate and, at the same time, described certain reactions which, while not serious, occasionally caused discomfort to the patient and some alarm to the physician. On the other hand, the action of sylناسol was found to be constant and predictable with but rare exceptions.

### Direction of the Blood Flow in Varicose Veins—The Trendelenburg Test and the Perthes' Test

In 1934 I<sup>2</sup> pointed out that in order to treat varicose veins successfully, it is necessary to fully understand the principles of the normal venous flow and the alterations which occur in the varicose state. The Trendelenburg phenomenon or test when properly performed, gives precise information regarding valve function and the presence or absence of reverse or backflow from the deep into the superficial veins. The four Trendelenburg states, according to Berntsen,<sup>3</sup> are shown in Fig. 1.

In accordance with this test, varicose veins

are classified as Trendelenburg positive, negative, double or doubly positive, and nil.

**Trendelenburg Test**—The patient stands with both lower limbs exposed to the groin. All the superficial veins are inspected and palpated to ascertain their size and the degree of tension or pressure within the vein. The patient is then placed in a recumbent position, the leg is elevated above the level of the pelvis, and the veins are stroked or "milked" toward the groin, thus emptying them. A tourniquet is placed around the upper thigh with sufficient pressure to block the superficial veins. The patient stands, and the veins below the tourniquet may remain collapsed and then fill slowly from below upwards in thirty-five to sixty seconds, or longer in some cases. The test is repeated, and when the patient stands the tourniquet is released quickly. If the veins distend quickly from above downward to their former state of tension, the patient is classified as *Trendelenburg-positive*.

The Trendelenburg-positive group comprises those cases in which the valve function in the upper part of the great saphenous vein is deficient or absent, permitting reverse flow from the femoral vein into the saphenous vein at the saphenofemoral junction. This is the type of case most frequently encountered and it is most effectively treated by preliminary high ligation and division of the great saphenous vein, and separate ligation and division of all the tributaries at the fossa ovalis, with subsequent injection therapy.

The immediate benefits to be derived from a high ligation and division of the great saphenous vein can be demonstrated visibly by the Trendelenburg test, what the tourniquet accomplishes

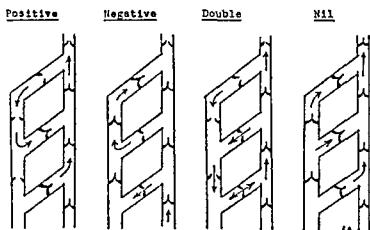


Fig. 1 The four Trendelenburg states

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\* The sylناسol used in this study was furnished through the courtesy of G. D. Searle and Company, Chicago, Illinois.

in preventing backflow in a valveless vein is precisely what the operation will do. So many surgeons<sup>4-14</sup> in recent years have adopted this type of surgery that there can be little doubt of its efficacy.

According to DeTakats,<sup>15</sup> the pressure in a valveless great saphenous vein when the patient is standing may be as high as 210 cm. of water. Obviously, high ligation as a preliminary measure in this type of case is the only means whereby this tremendous pressure or backflow can be prevented.

The *Trendelenburg-negative* case is one in which reverse flow from the deep veins into the superficial veins takes place through one or more dilated communicating veins, described by McPheeters<sup>16</sup> as "blowouts." On performing the Trendelenburg test in this group, the veins will fill rapidly when the patient stands with the tourniquet pressure maintained. If the varices in the leg are very large, preliminary ligation or ligations should be performed at the highest demonstrable point of backflow and all other points of reverse flow below it. In such cases I usually perform a high ligation and division of the great saphenous vein as an added measure of security. The sources of backflow from the deep veins may be more accurately ascertained by a modification<sup>17,18</sup> of the Trendelenburg test, or by the stripping method of Ochsner.<sup>19</sup>

The *Trendelenburg-double* group comprises those cases in which the backflow takes place at the saphenofemoral junction as well as through one or more of the dilated communicating veins in the lower part of the limb. Briefly, it is a combination of the positive and negative types of backflow and the treatment obviously is high ligation and division of the great saphenous vein, and ligation or ligations in the lower part of the limb wherever backflow can be demonstrated. This group makes up only a small percentage of the cases encountered in practice.

*Trendelenburg nil* cases are those with dilated veins in the presence of competent or normal valves. This is the early type of case frequently seen with no reverse flow. These varices may be obliterated by simple sclerosing injections.

## Summary of Trendelenburg Test

### Positive:

- A. With tourniquet on—veins fill slowly from below upward (35 to 60 seconds).
- B. With tourniquet off—veins fill quickly from above downward (1 to 10 seconds).

### Negative:

- A. With tourniquet on—veins fill quickly.
- B. With tourniquet off—veins fill quickly.

### Double:

With tourniquet on—veins fill quickly below the tourniquet but become fuller, or more tense, when the tourniquet is removed.

### Nil:

- A. With tourniquet on—veins fill slowly.
- B. With tourniquet off—veins fill slowly.

In performing the Trendelenburg test, the status of the short saphenous vein must also be borne in mind. One frequently sees cases in which reverse or backflow takes place from the popliteal vein into the short saphenous vein at the popliteal fossa. In such cases the same principle of treatment is applied—namely, high ligation and division of the short saphenous vein at its junction with the popliteal vein.

The *Perthes' test*, or Perthes' modification of the Trendelenburg test, is a simple test to determine patency of the deep veins. Theoretically, it should be performed on every new case before commencing treatment, operative or otherwise. In the absence of any edema or previous thrombophlebitis, however, it is safe to state that one may proceed with treatment without performing the test. Apply a tourniquet above the knee with sufficient pressure to block the superficial veins only, while the patient stands and the veins are distended. The patient is instructed to walk about actively. If, with the tourniquet in place, the veins below it collapse (empty), then one may be certain that there is no serious deep vein blockage and the patient may be treated. On the other hand, if the veins become more tense and cause pain, deep venous occlusion must be suspected and conservative treatment should be given. This test may be performed with a tight elastic bandage applied to the limb to be tested from the toes to the knee or above it.

Recently several workers have reported treating varicosities of patients with a history of thrombophlebitis if the acute process had occurred a number of years previously and Nature has had an opportunity to establish an adequate collateral circulation in the deep venous system. This attitude seems reasonable, since it is well understood that varicose veins are derelict veins, permitting reverse flow and in no conceivable manner functioning as normal veins in returning blood to the heart. The presence of edema and enlargement of a limb should make one suspicious of an insufficient deep vein circulation and great caution must be exercised before treating such patients. In the absence of edema, however, it is safe to assume that the deep veins are patent and functioning well, and to proceed with treatment in such cases. The constant application of the Perthes' test, or one of its modifications,

should give one experience in eliminating those cases not suitable for sclerosing therapy. In this connection the value of phlebography should not be overlooked. This method of diagnosis has been used rather too seldom.

### Indications and Contraindications

Much confusion exists in the minds of physicians regarding the indications and contraindications for sclerosing therapy. Numerous papers<sup>20-22</sup> have appeared in the past decade, some of which list every known acute illness, while others, interested in the mechanics of the blood flow, list the local conditions which logically are contraindications to the injection treatment.

In 1935, Edwards<sup>22</sup> in his paper "The Treatment of Varicose Veins: Is Systemic Disease a Contraindication?" discusses his experiences in a large city hospital clinic in Boston where, in a series of 1,000 consecutive patients, only three reactions were noted and these, fortunately, were not serious. It must be remembered that Edwards' experience embraced the type of patients usually seen in a city hospital clinic, with chronic disease as a background. Strictly speaking, on the basis of generally accepted contraindications, 375, or 37.5 per cent of the reported series, might have been denied this beneficial injection therapy.

For a detailed discussion of this topic one is referred to the excellent treatises of McPheeters<sup>23</sup> and Edwards.<sup>22</sup> In short, however, it might be stated that the injection of sclerosing solutions into varicose veins is indicated in all cases of varicose veins and conditions secondary to or resulting from varicose veins, providing no serious contraindication to such therapy exists.

For practical purposes the contraindications to injection therapy may be briefly summarized as follows:

1. Local causes
2. General diseases

The local causes which, in my opinion, definitely contraindicate injection therapy are diseases of the peripheral circulatory apparatus such as Raynaud's syndrome, thromboangitis obliterans, and advanced peripheral arteriosclerosis, whether due to diabetes or other causes, acute, subacute, and chronic thrombophlebitis of the deep veins with manifest impairment of function of the deep venous system, and acute superficial thrombophlebitis. Elephantiasis is listed by numerous writers as a definite contraindication. Pelvic tumors and inflammations are among the local conditions which contraindicate sclerosing therapy, and such treatment may be deferred until the underlying pathologic

pelvic condition is corrected. If the varicose veins then persist, injection therapy and/or operative correction is in order, whichever may be indicated.

Among the general causes may be mentioned uncontrolled diabetes, untreated syphilis, active tuberculosis, acute or latent thyroid disease, nephritis, malignancy, severe cardiac conditions including coronary disease, and general debility. As a matter of fact, one may go through the whole gamut of medical conditions or diseases and cite them as contraindications! For the sake of brevity, one can state that injection therapy should not be given in the presence of any acute or serious chronic illness, since the treatment of varicose veins is largely elective.

The presence of large ulcerations *per se*, when manifestly infected, as all varicose ulcers tend to be, might be considered a contraindication to injection therapy. In such cases, if the veins are large and the Trendelenburg test proves them to be of a type amenable to the operation of high ligation and division of the saphenous vein, I usually defer injection therapy but do not hesitate to operate at once. I believe that ulcers associated with large varicosities are a valid indication for the operation in the same sense that acute superficial thrombophlebitis calls for early operation. The quick response of ulcers associated with large varicosities after ligation and division of the affected vein is sometimes astounding.

There seems to be considerable difference of opinion not only among physicians but in the minds of the laity regarding the problem of thrombophlebitis. Since my experience embraces well over 300 cases of acute superficial thrombophlebitis involving either the great saphenous or short saphenous veins operated upon with not one untoward result, there is no doubt in my mind of the value of this procedure in such cases. For a more complete discussion of this subject, the reader is referred to the excellent work of Homans,<sup>24</sup> Welch and Faxon,<sup>25</sup> and others.

In July, 1942, Chapin and Asmussen,<sup>21</sup> of the Massachusetts General Hospital and the Fatigue Laboratory of Harvard University, reported "On the Occurrence of Dyspnea, Dizziness, and Precordial Distress Occasioned by the Pooling of Blood in Varicose Veins." These workers made a careful study of 250 patients afflicted with large varicose veins in the outpatient department of the Massachusetts General Hospital. The surprising result of this was to find that 47 (18 per cent) of the 250 complained of undue shortness of breath that was relieved in the recumbent position; 19 of these 47 also suffered mild precordial pain or palpitation, or

were uncomfortably aware of their heart action, and 3 were women who experienced attacks of sudden dyspnea, dizziness, and precordial pain simply on standing. These 47 patients were without gross signs of the known types of heart disease, although in some the blood pressure was slightly elevated. These authors also pointed out that in patients with large varicose veins it is evident that an amount of blood in excess of 500 cc. accumulates in their veins during standing or walking, and they concluded that undue fatigue, shortness of breath, dizziness, fainting, and precordial distress may be occasioned by the pooling of blood in varicose veins. These clinical investigations offered evidence that the circulatory efficiency is decreased by such extensive pooling and that removal of this peripheral blood reservoir restores the hemodynamics of the subjects toward normal and relieves their symptoms.

Pregnancy, formerly considered a definite contraindication to operative or injection therapy, is not so regarded any longer by most surgeons<sup>32,33</sup> conversant with this type of surgery. I have operated upon 32 gravid women up to the sixth month of pregnancy, and have given injection treatments in a large series of cases at my clinic without incident. Treatment is usually discontinued at the beginning of the eighth month and resumed, if necessary, when the patient is ambulatory postpartum and can come to the clinic or office.

### Technic of Injection

Assuming that the patient has been examined as outlined by the Trendelenburg and Perthes tests and is considered a suitable subject for sclerosing therapy, how does one proceed with treatment?

Those patients who present large varices are treated according to the method of McPheeters,<sup>34</sup> namely, isolation of a segment of vein between tourniquets after the vein has been emptied by elevation of the limb, the patient being recumbent, or by the use of an occluder (McPheeters, Theis). The skin at the site of injection is prepared with a suitable germicidal solution. Most patients are treated while standing, or while sitting on a table or platform about 30 inches high, with the legs in a dependent position. This renders the veins more prominent.

A 5 cc. syringe fitted with a sharp, short-bevel 25-gauge needle is then gently and firmly pushed through the skin into the vein with the needle upward. The position of the needle in the vein is quickly ascertained by the presence of blood which trickles or flows through the needle into the syringe. If the vein is small, the injection is given without further preparation; if medium-

sized or large, the vein is "milked" with the thumb and middle finger of the left hand, or by an assistant, after which the injection is given.

Unlike sodium morrhuate, which is relatively toxic in large quantities, synlasol may be used in amounts ranging from 5 to 10 cc. at one sitting.

I usually inject from 0.5 cc. to 3 cc. of the solution at any one site and, as a rule, place the first injection at the highest point in any vein or group of veins. As soon as the desired quantity of solution is injected, a tonsil sponge moistened with alcohol or a sterile dry sponge is then placed firmly over the site of the puncture and the needle is withdrawn. An adhesive strip about 8 inches long and 1 inch wide is placed over the sponge, binding it firmly over the injected area. The patient is instructed to remove the dressing after twenty-four hours and not to massage or rub the limb at the point injected.

Injections may be repeated at intervals of two to seven days and in no case is a total quantity of more than 10 cc. of the solution injected at one sitting.

All patients presenting extensive varicose vein formations are instructed in the proper application of a spiral elastic bandage which they are requested to wear throughout the treatment and for a short period after its completion.

Treatment may be given as often as three times a week, and if a period longer than two weeks has elapsed between treatments, it is advisable to resume treatment with a smaller quantity of synlasol in order to be certain the patient has not become sensitized. In this connection, one of the earliest and most valuable signs of impending allergy or anaphylaxis is the symptom of itching. Care should be taken to distinguish this itching from that occasionally seen at the site of injection where a local patch of dermatitis may be present as a result of the wet sponge which has been kept in contact with the skin for a day.

### Results

1. Synlasol was injected approximately 25,000 times in about 2,000 patients for the treatment of varicose veins, both in the clinic and in private practice (with the almost complete exclusion of any other sclerosing agent). This treatment was given either without preliminary ligation and division of the affected veins, or after the latter procedure had been carried out in cases of extensive varicosities with demonstrable reverse or backflow.

2. Not a single instance of injection ulcer or sloughing has occurred in this series of cases, nor has a single serious infection or thrombophlebitis

followed its use in the sclerosing treatment of varicose veins.

3. Allergy or sensitization was noted in only 5 cases, and 4 of these occurred in patients who had been treated with synlasol previously but who had had no injections for at least one month prior to the occurrence of this complication. Only one patient suffered a severe anaphylactic reaction (in my office) and this patient recovered after the administration of adrenalin, external heat, and rest. In this connection it might be wise to stress again the importance of itching as a premonitory symptom of impending allergy or anaphylaxis. At this point also it is advisable to stress the importance of testing the new patient, and old patients who have not been treated for some time, with a small injection of approximately  $\frac{1}{2}$  cc. of synlasol before proceeding with larger doses. Should the patient persist in manifesting intolerance of synlasol, it is my practice to stop its use and inject some other unrelated material, such as invert sugar or dextrose and saline, in the further treatment of the patient thus affected.

4. The objectionable symptoms of severe pain and cramp so frequently seen with some of the older solutions has not been encountered by me in any instance when synlasol was used.

5. Massive obliteration of the veins such as occasionally follows the injection of sodium morrhuate rarely occurs with synlasol.

6. Pigmentation, which is frequently seen after the injection of some of the older sclerosing agents, such as sodium salicylate, quinine, hydrochloride and urethane, and sodium morrhuate, is practically never seen when synlasol is used.

### Summary

An extensive trial of synlasol in 2,000 cases over a period of five years leads me to conclude that synlasol fulfills all the requirements for a safe and effective sclerosing agent in the treatment of varicose veins. Its use is attended with

none of the objectionable symptoms (pain, cramps, and systemic reactions) and sequelae (sloughs, residual discoloration, and nodulation) which result from the injection of some of the older sclerosing agents.

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### MORTALITY CURVES IN TUBERCULOSIS

The mortality curve in women reaches its high point in the middle of life, and is much higher than in young men, but the knowledge when it is evident that the

one high-rate group into the working and living conditions of another high-rate group; and unless every precaution is taken, the factors which contribute to the high rates in these respective groups may act and react upon each other to the jeopardy of the human beings concerned. Obviously, the situation has within it all the elements of an epidemic (or high endemic) potential.—Ed., *Am. J. Pub. Health*, July, 1943



# SPINAL FLUID FINDINGS IN CASES OF SYPHILIS IN THE GENERAL POPULATIONS OF MALES BETWEEN THE AGES OF 18 AND 38 YEARS, WITHOUT DETECTABLE NEUROLOGIC CHANGES

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CASES for this study were taken from selectees passing through the Armed Forces Induction Station, 480 Lexington Avenue, New York 17, New York. During the period of this study 218,133 selectees were reviewed. Of this total 5,487 were found to have syphilis. Chart 1 shows the percentage of white and colored selectees going through the station; also, the number having syphilis, with respect to race and the percentage of each race.

Of this group we are reporting spinal fluid findings for 3,000 cases only, because some of the patients were rejected for other reasons and therefore the spinal tap was not necessary to decide their acceptability. A complete history of each man was taken with reference to the onset of the disease, duration, amount of treatment, and results of previous spinal fluid examinations. Minimum adequate treatment was based on 42 intravenous and 18 intramuscular. A history of spinal tap within one year which was negative was accepted.

The first series of 1,500 cases were those of patients who had a history of syphilis for a period of five years or longer or of unknown duration (discovered by routine Wassermans given at Selective Service), or those with physical findings suggesting neurosyphilis. The second series comprises 1,500 examinations done on all syphilitic selectees except those with negative blood Wassermans, adequate treatment, and a history of the spinal fluid being negative.

Cases were classified as to the duration of the disease in years: congenital, one year, two years, three to four years, five to ten years, ten to fifteen years, fifteen to twenty years, twenty years or longer, and unknown duration. Chart 2 is self-explanatory as to duration, blood serologic findings, and treatment.

As may be seen in Chart 2, in duration one-sixth of the cases were of one to four years, and five-sixths were of over five years, or of unknown duration. Approximately two-thirds had positive serology and one-third negative. The majority of patients had received adequate or at least some treatment. Only 353 out of the total of 3,000 patients had not received any treatment. The majority of the cases in which the duration of the disease was unknown were discovered by the local Selective Service boards by routine Wassermans. This was the reason that many of the young men started their treatment. It is evident

that a great amount of good has been done by this simple routine procedure. Practically all of the patients in this series were single men or men who had been married since Pearl Harbor.

In the series of 3,000 spinal taps of syphilitics, 294 were found to have sufficient pathologic changes to cause rejection. These are shown in Chart 3.

Based on the findings in Chart 3, the following types of cases may be classified as latent syphilis:

## Early latent (asymptomatic):

Without detectable clinical signs or symptoms.

Infection of less than four years' duration, with or without treatment. If duration is unknown, patient less than 25 years of age.

Wassermann positive or negative.

## Late latent (asymptomatic):

Without detectable clinical signs or symptoms.

Infection of four or more years' duration, with or without treatment. If duration is unknown, patient 25 or more years of age.

Wassermann positive or negative.

Of the total 294 positive spinal fluids, only 25 were from patients below the age of 25. Of the early latent syphilis patients 15 were below the age of 25. Spinal-fluid changes in untreated early latent syphilis were found to be relatively infrequent. In treated early latent syphilitics, changes were more frequent. Spinal-fluid changes occur with practically the same frequency in late latent syphilis, regardless of the amount of treatment. Seven selectees with positive spinal-fluid findings had received adequate treatment and had a negative blood Wassermann. It is felt that negative blood serology is no indication of spinal fluid findings in any state of syphilis regardless of the amount of treatment.

It is evident, though, from Chart 3 that changes in the spinal fluid are more frequent in latent syphilitics with positive blood Wassermans.

Chart 4 shows the pathologic spinal fluid changes in the 294 selectees rejected.

The percentage of spinal fluid changes leading to rejection was 9.5 per cent, as shown in Chart 3.

CHART 1

	White	Colored	Total
Number of selectees examined	192,895	25,238	218,133
Number of syphilitics	2,776	3,071	5,847
Percentage of syphilitics	1.03	12.16	2.68 (average)

All patients except 15 had positive spinal Wassermanns. The second most persistent finding was increased globulin (174), third in importance was the colloidal gold curve (92). Least change was in the cell count (38).

Chart 5 records 100 cases that showed increased globulin only. These cases were accepted but it is felt now that they are a poor risk.

It is felt by the authors that increase in protein content of the spinal fluid is of utmost impor-

CHART 2

Congenital	Duration Since Discovery							Unknown	Total Cases
	1 year	2 years	3-4 years	5-10 years	10-15 years	15-20 years	20 years		
35	157	120	200	491	285	148	30	1 534	3 000
				Number of Positive Blood Serologies					
28	107	64	143	268	145	65	14	1 270	2 110
				Number of Negative Blood Serologies					
7	50	50	57	223	140	83	16	258	890
				Number of Adequate Treatments Based on 42 I V and 18 I M					
23	22	16	50	128	66	34	4	233	582
				Number with Some but Inadequate Treatment					
6	120	98	142	342	207	109	20	1 021	2 065
				Number with No Treatment					
0	15	6	8	21	12	5	6	280	353

CHART 3—NUMBER OF POSITIVE SPINAL FLUIDS AS TO DURATION, TREATMENT AND BLOOD SEROLOGIC FINDINGS (+ = POSITIVE BLOOD SEROLOGY — = NEGATIVE BLOOD SEROLOGY)

	Congenital	1 year	2 years	3-4 years	5-10 years	10-15 years	15-20 years	20 years	Unknown	Total	Com- bined Total	% Based on No Spinals in Chart 2
Adequate treatment with positive spinals	0+ 1-	1+ 1-	0+ 0-	4+ 0-	8+ 1-	6+ 1-	2+ 0-	1+ 0-	14+ 3-	36+ 7-	43	7.40
Inadequate treatment with positive spinals	2+ 0-	16+ 1-	4+ 2-	9+ 1-	29+ 4-	16+ 4-	10+ 5-	0+ 0-	101+ 9-	187+ 26-	213	10.32
No treatment with positive spinals	0+ 0-	0+ 0-	0+ 0-	0+ 0-	3+ 0-	1+ 0-	0+ 0-	0+ 0-	34+ 0-	38+ 0-	38	10.79
Totals	2+ 1-	17+ 2-	4+ 2-	13+ 1-	40+ 5-	25+ 5-	12+ 5-	1+ 0-	149+ 12-	261+ 33-	294	9.50

CHART 4—SPINAL FLUID FINDINGS

No with Positive Wassermann Increased Globulin Positive Colloidal Gold Curve Increased Cell Count (Wbc/cmm.)	No with Positive Wassermann Increased Globulin and Colloidal Gold Curve	No with Positive Wassermann Increased Globulin	No with Positive Wassermann and Colloidal Gold Curve	No with Positive Wassermann Increased Globulin and Increased Cell Count
1 (99 wbc/cmm.) 1 (4 wbc/cmm.) 1 (9 wbc/cmm.) 1 (4 wbc/cmm.) 1 (11 wbc/cmm.) 1 (4 wbc/cmm.) 1 (11 wbc/cmm.) Total 7	Total 72	Total 69	Total 11	2 (36 wbc/cmm.) 1 (8 wbc/cmm.) 1 (6 wbc/cmm.) 1 (7 wbc/cmm.) 1 (4 wbc/cmm.) 1 (4 wbc/cmm.) 1 (5 wbc/cmm.) 1 (12 wbc/cmm.) 1 (4 wbc/cmm.) 1 (7 wbc/cmm.) Total 11
No with Positive Wassermann and Colloidal Gold Curve Increased Cell Count	No with Positive Wassermann and Increased Cell Count	Increased Globulin and Increased Cell Count	No with Positive Wassermann only	Wassermann
1 (90 wbc/cmm.) 1 (4 wbc/cmm.) Total 2	1 (210 wbc/cmm.) 1 (191 wbc/cmm.) 1 (6 wbc/cmm.) Total 3	Total 15	Total 104	

CHART 5

	Congenital	1 year	2 years	3-4 years	5-10 years	10-15 years	15-20 years	20 years	Unknown	Total Cases
Cases with increased globulin only not reported in Chart 4		7	5	10	8	9	3	2	56	100
Cases with increased cell count only not reported in Chart 4	1	4	1	4	10	5	3		25	53

tance and is one of the earliest signs of involvement of the central nervous system in syphilis.

Chart 5 also includes 53 cases that showed change in cell count only (above 4).

### Conclusions

1. A study of spinal fluid findings on 3,000 syphilitics has been presented.

2. Many of these cases were discovered by the routine Wassermann tests given by local Selective Service boards.

3. In 3,000 cases among selectees 9.5 per cent had sufficient cerebral spinal fluid changes to war-

rant rejection by the armed forces.

4. Spinal fluid changes are more frequent in late latent syphilitics with positive blood Wassermanns.

5. Negative blood serology is no indication of spinal fluid findings in any state of syphilis regardless of the amount of treatment.

6. It is felt that changes in globulin content are most important as an early sign of syphilis of the central nervous system.

7. More adequate treatment is to be desired with spinal fluid examinations routinely, during and prior to termination of treatment.

### NURSE RECRUITMENT SLOWED UP

Supporting the plans of the Army and the Red Cross to provide adequate nursing care for wounded soldiers, Paul V. McNutt, Chairman of the War Manpower Commission, has instructed the War Manpower Commission's Procurement and Assignment Service to request hospitals and physicians throughout the country to assist in the recruitment of nurses.

"I am informed that the Army is in need of 4,000 nurses immediately," said Mr. McNutt. "Recruitment of nurses, I am told, has slowed up along with the growing belief that the war in Europe is about over."

"The men wounded in battle must have adequate care. No matter how quickly the war is brought to an end, we still have the problem of taking care of those wounded in recent battles who are now being brought to this country for hospitalization. We expect also that the final battle of Germany will not be without considerable casualties. We do not know how numerous these casualties will be. We hope they will be low, but we must be prepared. Nor does anyone expect a quick end to the war in the Pacific."

"I can think of no greater responsibility for professionally trained nurses than that of volunteering for duty in the care of our wounded soldiers. I hope and trust that all nurses who have been classified as available for military duty will immediately consider such action."

Mr. McNutt said that about 29,300 student nurses are being graduated this year. Of these, about 9,000 are needed for service with the Army or Navy. Out of a class of 26,816 graduated last year, about 4,803 nurses entered the armed forces for nursing service.

Although the larger total of nurses needed for military service would leave a smaller number of graduates this year for civilian nursing, there need be no curtailment of essential home-front nursing service, provided hospitals, physicians, civilians, and nurses themselves cooperate to assure the fullest use of nurses in their professional capacities, Mr. McNutt said he had been informed.

At present there is considerable underuse of the professional services of nurses with the result that

we have "luxury nursing" in some communities and an inadequate supply of essential nursing in others, reports to him indicate, Mr. McNutt said.

Mr. McNutt reported he had been informed that in some cases hospitals and physicians could help increase the supply of nursing services for essential needs by eliminating use of nurses and student nurses in clerical and other nonprofessional work. Civilians, he said, can help by not employing nurses except in cases where patients are critically ill.

Mr. McNutt suggested the following order of nurse use to assure that their services will be available on the highest professional level:

1. Nurses who can be spared from essential civilian services should volunteer for service with the Army or Navy.

2. Nurses who are employed in nonessential work should transfer to essential nursing services.

3. Civilian users of nursing services, including hospitals and physicians and patients, should share available nursing service according to the greatest need.

4. Inactive nurses, especially in outlying communities, should return to duty.

The armed forces, the W.M.C. chairman said, report a slowing down in recruitment of nurses, in spite of critical need, especially in Army and Navy hospitals in this country. Mr. McNutt paid a tribute to the nurses who have left civilian service for duty with the armed forces.

"The heroism," he said, "of our nurses on land and sea matches the courage of our brave soldiers and sailors. Many thousands of gallant fighting men owe their lives to these heroines who have gone to duty far from home. I have been informed that 175 Army nurses have been killed by enemy action or have died as a result of illness or injuries contracted in line of duty since December 7, 1941. They, indeed, have served humanity and the nation owes a debt of gratitude to them."

The W.M.C. chairman pointed out that nurses are classified as available for service with the Army or Navy only if State and local procurement and assignment committees, after studying community nursing needs and services, agree they can be spared.—Release from the Office of War Information

# Case Report

## MULTIPLE MYELOMA IN A FIFTEEN-YEAR-OLD BOY

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IN SPITE of the ever-increasing number of observations reported of multiple myeloma, clear-cut cases in younger age groups are still extremely rare. Some of the cases reported earlier<sup>1,2</sup> have been subsequently questioned for lack of convincing evidence,<sup>3</sup> while other reports<sup>4</sup> have been altogether discarded as not true myeloma.

In the classical textbooks of medicine and hematology the occurrence of myeloma is stated to be limited almost exclusively to those of older age. In his *Textbook of Blood Diseases* Naegeli records (1931) Klemperer's case of a 27-year-old woman as the youngest patient with myeloma reported. Matthes (1934), in his *Differential Diagnosis*, asserts flatly that multiple myeloma occurs only in the older age groups.

More recently, however, a few patients under the age of 20 have been reported showing highly suggestive or direct evidence of true multiple myeloma. On the other hand, some older patients originally reported under various descriptions have been recognized as having myeloma on subsequent review in the light of new knowledge. For instance, the case described by Nothnagel as lymphadenia ossium in a 24-year-old patient was, most likely, a case of myeloma. The more recent cases have been reported by Slavens,<sup>5</sup> Carlson (1936), Schaffer,<sup>6</sup> Laurentius,<sup>7</sup> Ghornbley and Pollock,<sup>8</sup> Bertrand, *et al*,<sup>9</sup> Williams, *et al*,<sup>10</sup> because of a more detailed account of hematologic, x-ray, and pathologic findings, special attention attaches to the cases published by Zach<sup>11</sup> and by Gordon and Schneider.<sup>12</sup>

The case reported by Zach concerns a 6-year-old boy who, on admission, presented a picture of cervical spondylitis considered to be of tuberculous origin on the grounds of characteristic clinical and x-ray findings. In the terminal stage the picture was complicated by the development of symptoms of cord compression. The diagnosis of multiple myeloma was made only at autopsy when lesions were found in the vertebrae, as well as "pulmonary metastases." No blood or bone-marrow studies were done. The histologic picture given in the pathologic report was not very clear. No plasma cells were found and the lesion was defined as being formed by three different types of cells described as myeloblasts, erythroblasts, and myelocytes.

The case of myeloma in a 9-year-old boy, described by Gordon and Schneider,<sup>12</sup> is very interesting. It was of the plasma-cell type, but presented many atypical features. No gross lesions were apparent in the skeleton. There was no distinct nodular involvement of the skeleton. The case was defined

by the authors as a "diffuse plasma-cell myeloma," and was regarded by them as "somewhat intermediate between true plasma-cell leukemia and plasma-cell myeloma." In this respect it would constitute another link in the chain of plasma-cell tumors. "At one end of this series is the typical multiple myeloma, at the other the rare plasma-cell leukemia, in between occurs a great variety of transitional forms. This case lies close to the extreme represented by plasma cell leukemia. The changes found in the organs suggest that, had the patient survived for a longer period, he might have developed frank leukemia."

Our case is a typical representative of the classic nodular multiple myeloma. It concerns a 15-year-old boy (12 at the onset) who sustained a pathologic fracture of the femur. Originally the diagnosis of osteosarcoma was made on the basis of clinical and x-ray impressions. The study of a sternal marrow aspiration was the first to lead to the diagnosis of multiple myeloma. This diagnosis has been subsequently confirmed by the pathologic examination of biopsy material. Because this case confirms once more in such a striking manner the importance of bone-marrow studies in the diagnosis of multiple myeloma, and because it proves that the possibility of multiple myeloma should always be kept in mind even in young patients, it seemed to us to be worth reporting.

### Case Report

Patient A. W., a 15-year-old boy, was admitted to the Montefiore Hospital on November 30, 1942, having been transferred from another hospital with the diagnosis of "small-cell sarcoma of the upper end of left femur and left side of pelvis with metastases to calvarium."

The patient gave a history of having had pain in the left hip for three years. The pain in the beginning was short and recurrent, and was treated as rheumatism; half a year after the onset of the pain the patient was unable to bear weight on the left leg, because of the severity of the pain.

In June, 1942, while walking in the park, he was attacked and had to be taken to the Fordham Hospital. Fracture of the left hip was found and the leg was placed in traction. On October 8, 1942, he was fitted with a brace and began to walk, but on October 13 he suddenly experienced severe pain in the left lower thigh. Soon afterwards he also developed . . . . . est. The . . . . . hology of the . . . . . s and left . . . . . chondrosarcoma . . . . . of osteoporosis with partial erosion and destruction of the cortex of the lower third of the shaft of the left femur. Small areas of osteoporosis noted over the pubic bone and the acetabulum suggested meta-

From the Medical Division, Montefiore Hospital, New York City.

Fellow of the Dana Foundation for Medical Research.



FIG 1 Pushed-out areas of bone destruction in the skull.

stases. There was pathologic fracture of the neck of the left femur with callus formation and partial bone union.

The patient was transferred to the Beth Israel Hospital on October 18, 1942, where a bone biopsy revealed a malignant tumor, reported as probably sarcomatous. X-ray studies showed an extensive destructive lesion in the left hip involving the neck of the femur, the intertrochanteric region, and extending down to the shaft; the x-ray of the skull showed multiple small and large osteolytic metastatic lesions. The patient continued to complain of pain in the chest, but the chest plate was persistently negative. The patient was transferred to the Montefiore Hospital for chronic care.

Physical examination revealed a well-developed, very thin and pale boy of 15, appearing chronically ill. Physical findings were essentially negative except for the abnormalities of the bony skeleton. The left leg was  $1\frac{1}{2}$  inches longer than the right; the upper third of the left femur showed a spindle-like swelling and reddish discoloration of the skin. A hard mass, about ten cm. in diameter, was felt in the upper third of the femur where a well-healed scar was seen. Active mobility of the extremity was greatly restricted.

Two weeks later the patient started to complain of increased pain in the chest and examination revealed a hard, tender swelling 2 inches in diameter, over the sixth rib on the right side.

X-ray studies made on December 12, 1942, revealed a malignant tumor, most likely osteogenic sarcoma; the bone destruction was found to include both trochanters, the upper end of the shaft, and the neck of the left femur. There was a pathologic fracture of the left femur and some bone condensation in the region of the fracture. Skull studies of January 15, 1943, revealed numerous small and large areas of bone destruction throughout all bones of the calvarium; they were reported as metastatic bone lesions.

The x-ray report of February 19, 1943, based on a review of all previous records, suggested the presence of Hand-Schuller-Christian disease. This diagnosis was thought to be substantiated by the marked improvement in the healing of the lesions at the site



FIG 2 Bone destruction in the sixth rib.

of the fracture seen on x-ray examination of February 11, 1943, which showed a considerable amount of new bone formation.

Laboratory findings were reported as follows:

November 30, 1942, hemoglobin, 70 per cent; red blood cells, 4,660,000; white blood cells, 5,700; nonsegmented neutrophils, 3 per cent; segmented neutrophils, 51 per cent; monocytes, 11 per cent, lymphocytes, 25 per cent; eosinophils, 4 per cent, basophils, 1 per cent. The Kahn test was negative, blood glucose was 94 mg. per cent, blood urea nitrogen was 9.5 mg. per cent; urine test was negative for albumin and sugar; urine test was also reported to be negative on December 1.

On January 29, 1943 a sternal marrow aspiration was performed. This yielded a marrow of low cellular count (18,000 in 1 cm., the average normal count being 100,000); the differential count revealed 8 per cent plasma cells; otherwise there was normal cell distribution: myeloblasts, 1.5 per cent, promyelocytes, 1.75 per cent; neutrophilic myelocytes, 28 per cent; eosinophilic myelocytes, 3.25 per cent; nonsegmented neutrophils, 16.5 per cent, segmented neutrophils, 20 per cent, eosinophils, 2 per cent, lymphocytes, 10 per cent; hematogones, 1.5 per cent; erythroblasts, 1.5 per cent; normoblasts, 11 per cent. Although the number of plasma cells was not excessive, their appearance seemed to be atypical because of numerous mitotic figures with double nuclei and also nucleoli, uneven staining, and pronounced vacuolization of the cytoplasm. They were reported as plasma myeloma cells, and the diagnosis of myeloma was advanced. Studies

of blood chemistry and urine were repeated but the report failed to substantiate this diagnosis.

On January 29, 1913, no Bence-Jones proteins were found in the urine there was no albumin, no sugar, in the blood were found albumin, 1.8 per cent, globulin, 0.8 per cent, calcium, 9.5 mg per cent, phosphorus, 4.5 mg per cent, phosphatase, 6.3 test of the serum content).

Schuller Christian disease had previously been suggested by some other observers, the blood cholesterol was determined on February 24, 1913, and was found to be 131 mg per cent.

In view of lack of confirmation of the diagnosis the sternal marrow aspiration was repeated on February 26, 1913. This time the total nucleated cell count was higher but still below the normal values, 11,000 in 1 cu mm. Plasma cells constituted 15.25 per cent and again appeared to be of the myeloma type. The increased number of plasma cells in this aspiration as compared to that of January 29 was interpreted as being due to a richer marrow obtained on this occasion, while that of the first aspiration contained a greater admixture of blood. This must have been the cause also of the "shift to the left" observed in the second aspiration owing to a larger proportion of pure marrow. The differential count was as follows: myeloblasts, 0.5 per cent, promyelocytes, 3.75 per cent, myelocytes, 33.5 per cent, nonsegmented neutrophils, 10 per cent, segmented neutrophils, 8 per cent, eosinophils, 4 per cent, monocytes, 1.5 per cent, lymphocytes, 7 per cent, plasma cells, 15.25 per cent.

March 5, 1913. The total nucleated cell count was found to be 28,000, with 10 per cent plasma cells. In light of the foregoing interpretation the number of plasma cells was explained as correlated to the total cell count, being dependent on the amount of aspirated blood.

On the basis of these bone marrow studies the diagnosis of myeloma was reaffirmed and repeated blood and urine studies as well as biopsy of the lesion were performed.

The results of urine analysis were the first to furnish confirmation for the diagnosis. On February 29 "albumin" was found in the urine in the amounts of 0.18 Gm total protein per 100 cm, and of 2.3 Gm total protein per twenty four hours. However, this "albumin" proved to consist for the most part of the Bence-Jones proteins. On March 5, 1913 the Bence-Jones test of the urine was reported faintly positive, but when I examined the urine on March 7, 1913, it contained large amounts

per cent, total globulin, 2.2 per cent, pseudoglobulin I, 1.1 per cent, pseudoglobulin II, 0.9 per cent, cuglobulin, 0.2 Gm per 100 cc. It was not before January 12, 1911, that a substantial rise in the blood was 9.1 per cent, and 2.6 per cent. I comprised 1.1 per cent, and cuglobulin 0.9 per cent. Other substances in the blood on that day were sugar, 93 mg per cent, urea nitrogen, 15.1 mg per cent, calcium, 11.9 mg per cent, phosphorus, 3.2 mg per cent, phosphatase, 6.5 B units.

Biopsy of a lesion in the skull, localized in the x-ray picture, was performed on March 8, 1913. Studying the smears made of the crushed biopsy material as well as of the centrifuged fluid in which these tissues were put, I found numerous plasma-like cells similar to those cells which I had observed in the bone marrow.

Myeloma it's general the course of his stay in the hospital. His blood count also showed improvement. On March 8, 1913, the hemoglobin was 70 per cent, the red blood count was 250,000, the white blood count was 13,000, non-segmented neutrophils, 1 per cent, segmented neutrophils, 80 per cent, lymphocytes, 7 per cent, monocytes, 7 per cent, eosinophils, 4 per cent, basophils, 1 per cent, Turck cell, 1 per cent. On May 10, 1913, the hemoglobin was 80 per cent, the red blood count was 4,800,000, the white blood count was 8,700. However, new lesions were discovered, on x-ray examination, in the left upper tibia and sixth right rib (x-ray report of February 20, 1913).

On August 12, 1913, the patient was discharged with his general condition much improved. He was readmitted on October 17, 1913, for pain over the left clavicle and a bony mass near the left sternoclavicular joint. He was again discharged on November 10, 1913, the pain having subsided and the swelling greatly diminished. On January 15, 1914, he sustained another pathologic fracture of the right arm and was readmitted to the hospital.

The patient was seen at frequent intervals during the time of his stay at home. His urine has almost always shown large amounts of Bence-Jones proteins, but the albumin almost disappeared. The blood count has been maintained at a normal level. There were no complaints except for the appearance of new lesions in the clavicle and arm mentioned above. Aspiration of the mass over the left sternoclavicular mass was attempted, but yielded only bloody material.

### Summary

A case of plasma-like cell multiple myeloma in a boy of 15 has been reported. At the time the diagnosis was made the patient gave a three-year history of bone pains and of pathologic fracture of the femur, so that at the onset of the present illness the patient was 12 years of age.

The diagnosis was made on the basis of bone marrow studies. Prior to that, the case had been diagnosed as osteosarcoma with metastases. At the time of the bone-marrow studies, no substantiating evidence for the diagnosis of multiple myeloma was found in either blood or urine examinations. The diagnosis was nevertheless advanced

Frequent urine examinations followed up in the subsequent months have showed intermittent appearance of Bence-Jones proteins in variable amounts, usually with albumin.

In the meantime blood studies repeated at fre-

quently was performed, showing albumin, 4.5

because atypical plasma-like cells were seen on repeated marrow aspirations. Subsequently, Bence-Jones protein appeared in the urine, at first only intermittently and in small amounts, but in the course of time appearing more often and in increasing amounts. Pathologic examination of a biopsy specimen of one of the skull lesions confirmed the diagnosis. Finally, the blood proteins, at first showing a low normal level with an especially low globulin content, started to rise, attaining 9.1 per cent protein as compared to 5.2 per cent at the time when the first bone marrow aspiration was performed. The high serum albumin and euglobulin fractions were significant (Gutman *et al.*).<sup>13</sup>

The case reported proves once more the importance of bone-marrow aspiration in the diagnosis of myeloma.

It proves also that youth should not rule out the possibility of this disease.

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### CANCER SOCIETY ABSORBS FOUNDATION FOR CARE OF CANCER PATIENTS

The recently formed National Foundation for the Care of Advanced Cancer Patients has been absorbed into the thirty-one-year-old American Cancer Society. Under the arrangement the older group will devote part of the funds collected nationally to providing care for incurable cancer patients of moderate means, in addition to its present activities of supporting research and education in the prevention and cure of cancer. Its annual appeal is conducted in the spring. The amalgamation was announced by Dr. Clarence Cook Little, of the American Cancer Society, and Julius Jay Perlmutter, organizer and president of the Foundation, which was chartered last May. The organizations joined forces to avoid any confusion that might follow separate national campaigns for funds. The Foundation will temporarily maintain its offices at 1450 Broadway in New York City, but its activities and records will be transferred immediately to the Cancer Society's offices at 350 Madison Avenue.

Dr. Frank E. Adair, president of the American Cancer Society, who is also vice-president of the Foundation, said that the former group will stimulate establishment of hospitals and homes to care for hopeless cancer cases and contribute funds for their support. The organization had formerly emphasized educational campaigns in prevention and care of cancer in its early stages, contributing to the support of cancer research and detection clinics all over the country.

The organization announced a drive on May 27 for \$1,820,000 to provide 365,000 days of hospital care for incurable cancer patients and the ultimate aims of the organization were listed as the establishment of hospitals for cancer patients of this type where low-cost rooms and bath could be obtained.

The campaign was dropped at the request of the American Cancer Society, which said it was making arrangements to include the care of incurable cancer patients among its activities.

### MISS WORTHINGHAM JOINS NATIONAL FOUNDATION

Basil O'Connor, president of the National Foundation for Infantile Paralysis, has announced that Miss Catherine Worthingham, former president of the American Physiotherapy Association, has joined the National Foundation.

She will serve in the Medical Department as director of technical education, in which capacity she will assist in developing on a still wider scale the National Foundation's programs of undergraduate training and graduate education in physical therapy.

Miss Worthingham has been granted a leave of absence from Stanford University, where for the past seven years she has been director of physical therapy for women in the School of Health.

Her new assignment will embrace a thorough evaluation of the progress being made in the field of physical medicine through the application of modern physical and occupational therapy technics employed in the treatment of infantile paralysis patients. She will act in a liaison capacity between the National Foundation and the many treatment centers throughout the United States where training courses in this branch of medicine are being sponsored by the organization.

Miss Worthingham is a director of the American Physiotherapy Association; a member of the advisory committee, Office of Vocational Rehabilitation; and a member of the Clinical Research Subcommittee of the Baruch Committee on Physical Medicine.

She received her Bachelor's degree at Pomona College, California, and her Master's degree at the University of Southern California. Positions she has held include: instructor of physical education, Clifton (Ariz.) Union High School; physiotherapist, Orthopedic Hospital, Los Angeles; instructor in physical education at the John Muir Technical High School, Pasadena, and instructor and assistant professor at San Jose State College.

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# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman [428 Greenwood Place, Syracuse]; George Baehr, M.D., and Charles D. Post, M.D.*

## Cardiology

POSTGRADUATE instruction for the Erie County Medical Society is to be held on November 28, 8:30 P.M., at Hotel Statler, Buffalo.

Dr. J. G. Fred Hiss, professor of clinical medicine at Syracuse University College of Medicine, will speak on "Common Errors in the Diagnosis of Heart

Disease with Special Reference to Rheumatic Heart Disease."

This instruction is presented by the Medical Society of the State of New York with the co-operation of the New York State Department of Health.

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## MOVIES ON NEUROPSYCHIATRY MADE AVAILABLE THROUGH NEW YORK UNIVERSITY FILM LIBRARY

A series of motion picture films on neuropsychiatric disorders has been made available to medical and strictly scientific groups for educational purposes by a new department of medical films in the New York University Film Library.

The series of eleven films is the work of Dr. S. Philip Goodhart, chief of the neuropsychiatric division of Montefiore Hospital, New York, and professor of clinical neurology at Columbia University, and Maj. Benjamin Harris Balser, MC, consultant in neuropsychiatry, First Air Force, and associate in neurology at Columbia University.

The films have been used for a number of years in courses given to medical students at Columbia University and are now being made available for teaching purposes and professional discussion groups through the medical department of the New York University Film Library.

"The motion picture, with its exactness and brevity, is a medium admirably adapted to the teaching of neuropsychiatry," the announcement

states. "By this means, patients manifesting symptoms of various disorders can be assembled for classroom study. Moreover, the progress of a disease in one patient over a period of years can be studied via the terse medium of the film.

"Unusual disorders, infrequently encountered in ordinary practice, are made readily available for study. The audience can analyze characteristic movements by 'slow motion' and see the results of special studies covering many years. Different forms of motility, impossible to describe accurately by words alone, are vividly portrayed through the motion picture."

The announcement also points out that the films may be rerun so that study groups may review the great range of symptomatology presented.

The medical department of the film library is under the supervision of a committee of the New York University College of Medicine, and distribution of the films will be restricted to professional groups and organizations.

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## NEW FOLDER DESCRIBES HEALTH DEPARTMENT SERVICES

An illustrated leaflet describing the organization and activities of the New York City Health Department has just been issued by the Department's Bureau of Health Education, it was revealed on September 27 by Health Commissioner Ernest L. Stebbins. Entitled "This Is Your Health Department," the new eight-page folder is designed to acquaint New Yorkers with the Health Department's widely varied activities. Single copies may be obtained without charge at District Health Centers throughout the city, or by writing directly to the New York City Department of Health, 125 Worth Street, New York 13, New York.

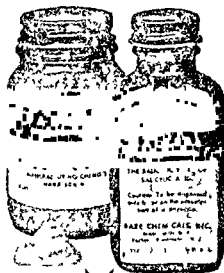
"All too many people in New York tend to think of their Health Department as an organization solely concerned with disease control and quarantine regulations," stated Dr. Stebbins. "They are not familiar with the many other Department services which range from producing life-saving vaccines and

serums and inspecting the city's food and milk supply to the operation of child-health stations and dental-hygiene services for city youngsters. However, unless the men, women, and children of the city are acquainted with these and the many other services of the Health Department they cannot be expected to derive the fullest benefit from them.

"The new leaflet is designed to introduce New Yorkers to these services by giving them a bird's-eye view of the entire Department, including the activities of each of its bureaus and divisions. I hope," concluded Commissioner Stebbins, "that all persons interested in what the Health Department is and what it can do for them will secure a copy of the folder at the earliest opportunity."

According to Savel Zimand, Director of the Bureau of Health Education, "This Is Your Health Department" is the tenth of a series of new pieces of literature produced by the Bureau during the past year.

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# Medical News

## Forum on Allergy in Pittsburgh January 20-21

THE seventh annual Forum on Allergy will be held in the Hotel William Penn, Pittsburgh, on Saturday and Sunday, January 20-21, 1945.

Special lectures by outstanding authorities, study groups, pictures, demonstrations, symposiums, and panel discussions will comprise the program.

On Friday evening preceding the Forum, the American Association of Allergists for Mycological Investigation will hold its annual meeting, at which time the results of this group's cooperative research on allergy to fungi will be reviewed.

The Forum, which is an international postgraduate organization, was founded in 1938 at Cincinnati to provide a place in which to review the progress of clinical allergy, to provide in peacetime a forum for the younger members, and to offer intensive postgraduate instruction in allergy to physicians working in other fields. The founders were Dr. Tell Nelson, Chicago; Dr. Karl D. Figley, Toledo, Ohio; and Dr. Jonathan Forman, Columbus, Ohio. Annual meetings have been held each year since, in Toledo in 1939; in Chicago in 1940;

in Indianapolis in 1941; in Detroit in 1942; in Cleveland in 1943; and in St. Louis in 1944.

In 1940 the Forum's Gold Medal and annual oration were established as a means of recognizing outstanding contributions to clinical allergy. The first recipient was Dr. Béla Schick, New York City, who introduced the word "allergy"; the second was Dr. W. W. Duke, Kansas City; the third, Dr. Arthur F. Coca, New York City; the fourth, Dr. Robert A. Cooke, New York City. This year the Forum medal goes to Dr. Milton J. Rosenau, Chapel Hill, North Carolina.

This year the Marcelle Prize has been established through the courtesy of the Marcelle Cosmetics, Inc., and will be given to the author of the best paper on allergy to appear in the American medical literature during the year. The first prize will be \$350 and the second prize \$150. The awards will be based on the decision of a jury of distinguished allergists.

For further information, copies of the book, and registration, write Jonathan Forman, M.D., Director, 956 Bryden Road, Columbus 5, Ohio.

## National Committee for Mental Hygiene Meets in New York

THE thirty-fifth annual meeting of the National Committee for Mental Hygiene was held in New York City November 8-9. Topics of the sessions were "Mental Hygiene of Industry and Reconversion," "Rehabilitation and the Returning Veteran," "Race Relations," and "Services to the Mentally Ill Today." The luncheon session was devoted to the discussion of "Mental Hygiene Considerations in Peace Plans." Chairmen of the sessions were Dr. C. C. Burlingame, Psychiatrist-in-Chief, the Institute of Living, Hartford, Connecticut; Mrs. Anna Rosenberg, Regional Director, War Manpower Commission, New York City; Dr. V. T. Thayer, Educational Director, Ethical Culture Schools, New York City; Dr. James S. Plant, Chairman, Executive Committee, National Committee for Mental Hygiene; and Dr. Samuel W. Hamilton, Mental Hospital Advisor, Division of Mental Hygiene, United States Public Health Service, Washington, D.C.

The speakers and their topics were as follows: Col. H. Edmund Bullis, War Department, "The Hazards of Industrial Changeover"; Dr. Bruno Solby, U.S.P.H.S., "The Meaning of Mental Hy-

giene in Industry"; Dr. Matthew Brody, Brooklyn, "Dynamics of Mental Hygiene in Industry"; Dr. Sol W. Ginsburg, New York, "Community Responsibility for Neuropsychiatric Discharges"; Capt. Wilson R. G. Bender, "The Man as He Leaves the Service"; Mrs. Ethel Ginsburg, New York City, "Veteran Into Civilian—The Process of Readjustment"; Dr. Thomas A. C. Rennie and Luther E. Woodward, Ph.D., New York City, "Rehabilitation of the Psychiatric Casualty"; H. Scudder Mekeel, Ph.D., Madison, Wisconsin, "Cultural Aids to Constructive Race Relations"; Mr. Robert L. Cooper, Esopus, New York, "Frustrations of Being a Member of a Minority Group: What Does It Do to the Individual and to His Relationship with Other People?"; Harry C. Oppenheimer, New York City, "Nondiscriminatory Hospital Service"; Leonard Edelstein, Philadelphia, "Dangers to Our Care of Patients"; and Dr. Frank F. Tallman, Columbus, Ohio, "What the Mental Hygiene Program of a State Might Be." At the luncheon session Lyman Bryson, of the Columbia Broadcasting System, spoke on "The Effect of Peace Conditions on International Amity."

## City Takes Steps to Combat Rabies

IN AN effort to curb the outbreak of rabies, New York City patrolmen on October 18 were ordered by Police Commissioner Lewis J. Valentine to issue summonses to all dog owners who violate the provisions of the Sanitary Code by allowing their pets to run without a leash. Those found guilty will face a maximum fine of \$500 or one year in jail. This order was issued by Commissioner Valentine after a conference held recently with Health Commissioner Ernest L. Stebbins. Not only will summonses be served on the dog owners found violating the law, but police officers have been instructed by Commissioner Valentine to obtain the license

number or any other identification in case of dogs not accompanied by their owners. Police officers will then locate the owners and serve summonses to them.

"Despite repeated warnings," stated Police Commissioner Valentine and Health Commissioner Stebbins, "the people of New York do not seem to realize the grim seriousness of the present rabies outbreak. Urged over and over again to keep their dogs leashed when out of doors, they have persisted in allowing them to run at large on the streets and in the parks. As a result, the disease which . . . for

[Continued on page 2500]



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[Continued from page 2498]

a while . . . was limited to the borough of the Bronx has now spread to other parts of the city. The time for temporizing has passed. We must employ the strongest methods at our command to get this terrible disease under control before it begins taking a heavy toll of human as well as animal life.

"Since 1934 there has been a section of the Sanitary Code stating that 'No dog shall be permitted at any time to be on any street or in any public park or place in the City of New York, unless effectively restrained by a chain or leash not exceeding six feet in length.' (Section 17, N.Y.C. Sanitary Code.) If the people had obeyed this law and kept their pets on a leash, we would not today be faced with the danger of a city-wide outbreak of rabies.

"However, in view of the dire seriousness of the present situation, we propose to see that this law is obeyed. All members of the Police Department have therefore been directed to issue court summonses to dog owners who allow their dogs to run at large without a leash. Those found guilty of violating Section 17 of the Sanitary Code are subject to a maximum fine of \$500 or one year in jail. This meas-

ure is absolutely necessary to safeguard the health of the city."

Condemning the indifference of many dog owners, which they charged was "responsible for the current rabies outbreak," they stated that "One woman in New York City has already died from the bite of a rabid dog.

Unless the public cooperates more fully in the control of this disease, other victims may shortly follow."

Commissioners Valentine and Stebbins pointed out that the Police Department order in no way modifies the current ruling that all unleashed dogs must be picked up by the A.S.P.C.A. and destroyed unless arrangements are made within forty-eight hours to maintain them in approved quarters for a six months' isolation period.

Following the conference between Commissioner Valentine and Commissioner Stebbins, the problem was placed before Chief Magistrate Henry J. Curran, who is in full agreement with the need for the action taken by the Police Department.—*Release from the Police Department and the Department of Health, New York City*

### Seventh Session of School of Malariaology Held in October

FIFTY-FIVE Medical Department officers were selected to attend the seventh session of the Army School of Malariaology in the Panama Canal Zone starting October 13.

The officers who attended received a four-week course of instruction which included training in entomology, parasitology, the sanitary-engineering aspects of malaria control, the use of insecticides,

larvicides, and repellents, and the suppressive and clinical treatment of malaria.

The school, which is under the command of Col. Charles G. Souder, MC, was opened last February, and combines in a suitable location the various facilities used by the Army to train specialists in malaria control.—*Release from the Office of the Surgeon General, Oct. 16, 1944*

### New Army Bulletin on Gonorrhea

PENICILLIN is the drug of choice in the treatment of gonorrhea, according to a new War Department bulletin (TB Med 96). The use of sulfonamides, it says, will be limited to those cases not responding to adequate penicillin therapy and those instances in which penicillin is not available through normal supply channels. However, it is particu-

larly important, the bulletin warns, that patients with gonorrhea treated with penicillin be carefully followed with respect to the possible development of primary and secondary syphilis which may be retarded or masked by the penicillin therapy.—*Release from the Office of the Surgeon General, Oct. 16, 1944*

### Red Cross to Study Its Medical Work

BASIL O'CONNOR, chairman of the American Red Cross, has announced the appointment of a special medical and health committee composed of eleven men, prominent in their respective fields, to survey current Red Cross medical and health operations and to recommend plans for the postwar period.

In emphasizing that health and medical problems touched "virtually every aspect of Red Cross activities, whether in terms of disaster relief, nursing, accident prevention, nutrition, or blood donations," Mr. O'Connor said that he had asked the committee to survey "what we are doing currently, analyze the results achieved, and give me a blueprint of possible Red Cross activities in these fields in the postwar period."

Dr. Lewis Weed, of the Division of Medical Sciences, National Research Council, will serve as chairman of the committee, and Dr. Felix J. Underwood, of Jackson, Mississippi, president of the American Public Health Association, will be vice-

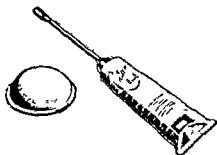
chairman. The secretary of the committee will be Dr. Henry R. Viets, lecturer on neurology at Harvard Medical School. Other members include Dr. George Baehr, director of clinical research at Mt. Sinai Hospital, New York City; Dr. Wilburt C. Davison, dean and professor of pediatrics, Duke University Medical School, Durham, North Carolina; Dr. Morris Fishbein, editor of the *Journal of the American Medical Association*, Chicago; Dr. Alan Gregg, director of the division of medical sciences, Rockefeller Foundation, New York City; Dr. Frank Lahey, Boston, national chairman of the directing board, Procurement and Assignment Service for Physicians, Dentists, Nurses, Veterinarians, and Sanitary Engineers; Dr. Roger I. Lee, Boston, president of the American Medical Association; Maj. Gen. Norman T. Kirk, Surgeon General of the Army; Vice-Admiral Ross T. McIntire, Surgeon General of the Navy; and Dr. Thomas Parran, Surgeon General of the U.S. Public Health Service.

[Continued on page 2502]



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L A N T E E N

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[Continued from page 2500]

## Hygeia Editor Tells of Goals for Physical Fitness Program

THE goals of the campaign for physical fitness, started September 1 by a Joint Committee on Physical Fitness, representing the American Medical Association and the National Committee on Physical Fitness, are outlined in the September issue of *Hygeia, The Health Magazine*, in an editorial "Keep Fit and Like It," by Morris Fishbein, M.D. This campaign, he declares, may prove to be one of the greatest possible significance to the health and happiness of the American people. Dr. Fishbein says:

"The great victories which are being won by American troops all over the world are not being won by men who are weaklings. In this war the American soldier has proved himself to be a competent fighter. He represents a selection of the best physical specimens that our nation has developed. To a group of men selected by the Selective Service and then reexamined by the physicians of the Army and Navy medical departments have been applied technics for physical and military training that the years have proved to be efficient.

"On the basis of available facts and figures, the American people are today probably the healthiest people in the world. Our sickness and death rates are among the lowest of all the great nations. Certainly our standards of living and the state of our nutrition are well up to the best that nations as a whole can demonstrate. However, there are still great areas of need. The 4,000,000 men rejected by Selective Service because they could not meet physical or mental standards are in need of what medicine and physical training have to offer. Many of the registrants were found to be pampered and soft and in need of conditioning. It would be folly for a nation as wealthy and as efficient as ours to fail to give to these people the most that medicine and physical training can give in order to make them effective.

"Modern medicine knows that not every person who is mentally or physically unfit can be benefited. Many defects are not preventable with the knowledge that medicine now has to offer. Numerous defects cannot be corrected. Perhaps 1,500,000 of the 4,000,000 referred to would be in this category. Nevertheless, that would leave 2,500,000 men who could be benefited by the application of proper medical treatment and modern physical conditioning. Many of these men could be made to meet the needs of the armed forces. Most of them could be made much more effective in the occupations which they fill in civilian life.

"The doctors of the United States have joined with the National Committee on Physical Fitness in the development of a Joint Committee which is going to emphasize physical fitness as a special job for the year beginning September 1, 1944. The knowledge that medicine has gained about life and health and the program that has been established by experts in the field of physical education and recreation will be combined to overcome as many

as possible of the preventable and correctable defects that were responsible for the rejection of two thirds of the men who were summoned to the armed forces. The physicians have the responsibility for inventory before and after the establishment of the physical fitness program to determine the nature of the difficulties to be overcome and then to determine how well the results have been accomplished.

"Even ordinary physical fitness requires development. Physical fitness is a bodily state in which the tissues have power and efficiency. The basic material of the American body is sound; it needs training.

"The purpose of the campaign is not the development of big muscles. Physical fitness implies that the heart, lungs, teeth, eyes, and other organs are physically sound and capable of working efficiently. Physical fitness implies specific fitness or skill in certain performances. Physical fitness is needed not only by the high school and college students and by the armed forces but by every man and woman in this country. Especially is physical fitness needed in industry, where the fitness of every worker must be geared to his job. The Council on Industrial Health of the American Medical Association, working with representatives of management and labor, is concerning itself particularly with determining the physical condition of workers and maintaining continuous records of the workers' health and fitness.

"Physical fitness includes the practice of good personal hygiene and the application of established knowledge to improving the health and fitness of the human body. It includes enough sleep, the right kind of ventilation, and continuous emphasis on cleanliness. It demands proper nutrition, good posture, controlled exercise, and rest periods. It embraces mental hygiene and a program of recreation.

"In Washington on July 27 and 28 a conference was held under the auspices of the Joint Committee of the American Medical Association and the National Committee on Physical Fitness in which more than one hundred leaders in all the fields concerned took part. Out of that conference came a program. The Joint Committee on Physical Fitness has adopted these goals:

1. Help each American learn physical fitness needs.
2. Protect against preventable defects.
3. Attend to correctable defects.
4. Know how to live healthfully.
5. Act to acquire physical fitness.
6. Set American standards of physical fitness at high levels.
7. Provide adequate means for physical development.

"The year of special emphasis on physical fitness initiated by this conference may well prove to be one of the greatest possible significance for the health and happiness of the American people."—*A.M.A. News*

## Old Friend—New Name

EFFECTIVE May, 1944, the historic Henry Street Visiting Nurse Service of New York City became officially the "Visiting Nurse Service of New York." The change of name in no way affects the far-reaching public service maintained by this institution since its founding fifty years ago by the late

Lillian D. Wald. Headquarters still are at 262 Madison Avenue; the telephone still: "Caledonia 5-0900." And, as always, it continues to supply part-time skilled nursing care to the sick in their own homes, and lends its aid to safeguarding the

[Continued on page 2504]

**TABLETS FOR *Oral* USE—  
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[Continued from page 2502]

health of the community, regardless of race, color, religion, or ability to pay.

Coincident with the change of name, the Visiting Nurse Service has been incorporated as a separate organization. The Henry Street Settlement continues as a neighborhood house on the lower East Side, Manhattan, and the Visiting Nurse Service will carry out its program to give part-time skilled nursing care in homes throughout the boroughs of Manhattan, Bronx, and Queens, as heretofore.

Of major interest in the reorganization of the Visiting Nurse Service is the inclusion of physicians as regular members on the board of directors, for the first time. Dr. George W. Kosmak, who has been chairman of the Medical Advisory Committee of the Service for many years, and Dr. Haven Emerson and Dr. Harry Aranow, both long-time members of the advisory body, are continuing their association as directors in the new organization.

The Medical Advisory Committee has in the past been an auxiliary committee without executive powers, but now is made one of the subcommittees of the Board, with its chairman a member ex-officio of the Executive Committee. Board members are elected for a term of office not to exceed three years, and provision is made in the bylaws for a rotation of committee chairman.

Also for the first time, nurses have been named members of the board. Those just elected are: Miss Isabel Stewart, professor of nursing education at Teachers College, Columbia University, and Miss Marion W. Sheahan, director of the Division of Public Health Nursing, New York State Department of Health, and president of the National Organization for Public Health Nursing.

It is felt that the inclusion of medical and nursing personnel on the board greatly strengthens the program of the Visiting Nurse Service.

Under the recent reorganization, James L. Harrison becomes president of the Visiting Nurse Service

and R. Gordon Wasson, treasurer, George W. Alger remains as the chairman of the board.

The Nursing Service is available to all patients whose physicians are prepared to give the nurses orders for treatments, medication, etc., irrespective of the patients' ability to pay for the nurses' visits. Physicians can call for the services of a visiting nurse when their patients first return home from the hospital, or whenever they have patients sick at home, or whenever there are any other health problems in the home. Although all first calls coming to the Service are answered by a home visit, *no patient can be cared for who is not under medical supervision*. Patients not under medical care are urged to obtain it. Service given on such first visits is limited to basic necessities, as approved by the Medical Advisory Committee of the Service.

Care is given *free or below cost*, as always, to those unable to pay. Public contributions make this possible. Care is given *at cost* to those who can pay. The cost is \$1.50 for a visit lasting not longer than three-quarters of an hour (50 cents for each additional quarter hour). Experience shows that less than an hour is sufficient for the average call.

Fee adjustments are made individually by the nurses at the time of their visits. The organization invites recommendations from physicians as to the amount of adjustment indicated.

The nurses are on duty from 8:30 A.M. to 5:00 P.M. daily, except Sundays and holidays, when only emergency calls can be answered. They will stay with the patients as long as necessary but no longer. Other patients are waiting for them.

The Visiting Nurse Service is willing, on request, to send a member of the administrative staff to explain to any physician in detail about its management and over-all program. To make arrangements for such a visit, or to refer patients for nursing care, physicians are invited to telephone the Visiting Nurse Service of New York, Caledonia 5-0900. The director is Marian G. Randall, R.N.

## County News

### Albany County

The speaker at the county society meeting on October 25 was Dr. Samuel M. Peck, Senior Surgeon (R) of the U.S. Public Health Service. The title of his address was "Problems in Industrial Dermatoses." Discussion of the paper was opened by Dr. Rudolph Ruedemann, Jr., of Albany.

In a recent address before the Exchange Club of Utica, Dr. John B. Congdon, of Albany, appealed to the members of that organization to work against the proposed program of socialized medicine.

Dr. Congdon, who is regional vice-president of the Exchange Clubs, said that he spoke on behalf of the "white-collar man in the middle class who under socialized medicine would not be able to select his own physician but would have to take one from a Federal panel." \*

### Allegany County

A regular meeting of the county society was held in Belmont on October 12.

The Allegany County Professional Registered Nurses' Association joined the society at dinner, after which the two groups held separate business meetings. Dr. Wallace Hamby, of Buffalo, was the speaker at the county society meeting.\*

### Bronx County

A regular meeting of the county society was held at Burnside Manor on October 18 at 8:30 P.M.

Following an executive session, Dr. Moses H. Krakow, newly elected president of the county society, gave his inaugural address.

The other speaker on the evening's program was Dr. Herbert H. Bauckus, President of the Medical Society of the State of New York, who spoke on "Medical Expense Insurance." Discussion was led by Drs. Milton J. Goodfriend and John L. O'Brien.

Montefiore Hospital for Chronic Diseases, the Bronx, has opened a clinic for the diagnosis and treatment of convulsive disorders and migraine under the auspices of the Division of Neuropsychiatry, with Dr. H. Houston Merritt as chief of division.

The clinic will be held on Mondays at 9:00 A.M. in the Hospital's Follow-Up Clinic. In addition to patients who require the clinic services because of lack of funds, patients recommended by the family physician for diagnosis and special therapy will be accepted for treatment both in the clinic and in the wards.

\* Asterisk indicates that item is from a local newspaper.



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(Continued from page 2504)

**Chautauqua County**

Dr. George W. Cottis, of Jamestown, past president of the Medical Society of the State of New York, was elected chairman of the Board of Visitors of the State Institute for the Study of Malignant Diseases. The organization meeting was held in Buffalo on October 10.

**Columbia County**

At the annual meeting of the county society held in Hudson on October 3, Dr. Everett Jacobs read a paper entitled "The Clinical and X-Ray Diagnosis of Ruptured Duodenal Ulcers."

Dr. Frank Maxon, of Chatham, spoke on behalf of the proposed new Columbia Memorial Hospital.\*

**Dutchess County**

On October 1 the Associated Hospital Service of New York made its surgical service plan operative in Dutchess County, under a merger with the Medical Expense Fund of New York, Inc.

Dr. Chester O. Davison was the local director of the Medical Expense Fund, which was one of several medical insurance plans which were recently merged into the United Medical Service, Inc.\*

. . .

Dr. Harry LaBurt, president of the county society, has announced the appointment of a committee to investigate the possibility of providing communicable-disease hospital facilities in the county. Physicians who will serve in this capacity are: Dr. Scott Lord Smith, representing Vassar Brothers Hospital; Dr. James E. McCambridge, of St. Francis Hospital; Dr. L. Edward Cotter, of Red Hook, representing the Northern Dutchess Health Center; and Dr. Edgar F. Powell, of Fishkill, representing Highland Hospital of Beacon.

The county Board of Supervisors and the Poughkeepsie Board of Aldermen have been invited to name four members of this study committee.\*

**Fulton County**

Dr. Percy Pelouze, authority on venereal diseases, was guest speaker at a meeting of the county society held in Gloversville on September 28. His topic was "Gonorrhea."

Dr. Morris Kennedy, of Gloversville, president of the county society, conducted the business session and introduced the speaker.

Among the other guests at the meeting were Dr. James H. Lade, Director of the Division of Syphilis Control of the State Department of Health; Dr. Robert S. Westphal, assistant director in the same department; and Dr. James J. Quinlivan, of Amsterdam, district health officer.

Preceding the program dinner was served to thirty members and guests.\*

**Genesee County**

Dr. Carl C. Koester, of Batavia, was re-elected to the Board of Trustees of Kiwanis International at that organization's wartime convention held recently in Chicago.

Dr. Koester is a member of the staff of Genesee Memorial Hospital, chief of the nose and throat department at St. Jerome's Hospital, consultant to the United States Veterans Facility, attending surgeon at Buffalo Eye and Ear Infirmary, and con-

sultant otolaryngologist for the Batavia school system.

He is in addition a member of the Selective Service Medical Advisory Board in Batavia, a past vice-chairman of the Medical Defense Committee, and a past president of the county medical society.\*

**Greater New York**

Three New York physicians are borough chairmen of Physicians' Committees in the campaign of the Visiting Nurse service of New York which opened October 26. They are: Dr. George W. Kosmak, Manhattan; Dr. Harry Aranow, the Bronx; and Dr. Miller A. Sanders, Queens.

. . .

Edward Corsi, New York State Industrial Commissioner, has made the following appointments to the Medical Practice Committee as authorized by Chapter 459 of the Laws of the State of New York: Dr. Francis Michael Conway, New York County, *chairman*; Dr. E. Welles Kellogg, Queens; and Dr. Joseph Raphael, Kings County.

**Greene County**

Dr. William Vernon Wax, of Catskill, has been elected to the International College of Surgeons. He is also a member of the Association of Military Surgeons of the United States.\*

**Herkimer County**

Dr. Frank L. Meleney, of New York City, was the guest speaker at the meeting of the county society held at the Palmer House in Herkimer on October 10. His subject was penicillin therapy.

During the annual business meeting officers for the coming year were nominated, the election to take place at the December 12 meeting.\*

**Kings County**

A stated meeting of the county society and the Academy of Medicine of Brooklyn was held on the evening of October 17, with a symposium on modern medical problems as the feature of the scientific program. Dr. Jean Curran, president and dean of the Long Island College of Medicine, gave an address entitled "Medical Education—Its Relationship to Problems of Modern Practice." The other speaker was Dr. Morris Hinenburg, executive director of Brooklyn Jewish Hospital, whose topic was "Health Insurance and the Hospital."

. . .

The medical profession was invited to attend a special meeting on "Rehabilitation and Tuberculosis" of the Kings County Medical Society at 4:00 P.M. on October 31.

The program was presented by four speakers. The first was Mr. Edward T. Fagan, chairman of the Rehabilitation Committee of the Brooklyn Tuberculosis and Health Association, who presided. The medical aspects of the topic were discussed by Dr. Thomas N. Sheen, clinical consultant of Triboro Hospital. The social and economic aspects were presented by Miss Margarette B. Helmle, rehabilitation secretary of the Brooklyn Tuberculosis and Health Association. Mr. Edward Hochhauser, executive director of the Committee for the Care of the Jewish Tuberculous, had as his phase of the subject the industrial aspects. A general discussion followed the main addresses.

[Continued on page 2508]

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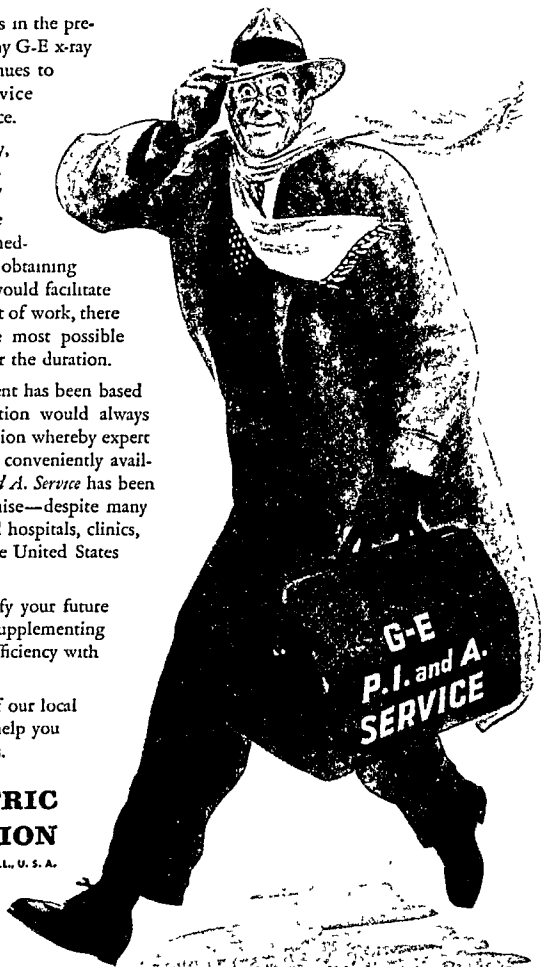
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[Continued from page 2506]

The last two Friday Afternoon Lectures for November will be given in MacNaughton Auditorium at 4:00 p.m. on November 17 and November 24. The first will be "Diagnosis and Treatment of Amebic Infection," by Dr. Howard B. Shookhoff, epidemiologist in Tropical Diseases, New York City Department of Health. The second lecture, entitled "The Pneumonias of Early Infancy," will be delivered by Dr. Benjamin Kramer, chief pediatrician of the Jewish Hospital of Brooklyn.

There will be a meeting of the Pediatric Section of the county society on Monday evening, November 27. Dr. Matthew Walzer will speak on "Food Allergy in Infancy and Childhood."

#### Madison County

The one-hundred and thirty-eighth annual meeting of the county society was held at the Hotel Oneida in Oneida on October 26. Dinner was served to members and guests at 6:30 p.m. and business and scientific programs followed, at 8:00 p.m. "The Medical Indemnity Insurance Program" was the first address. The speaker was Dr. Leo F. Gibson, of Syracuse, chairman of the Medical Indemnity Insurance Committee of the Onondaga County Medical Society. The first scientific paper of the evening was "Traumatic Surgery with Emphasis on the Treatment of Wounds and Shock," by Dr. Emmett A. Dooley, assistant clinical professor of surgery, New York Post-Graduate Medical School, Columbia University. The second paper was one by Dr. Ivan Hekimian, entitled "The Therapy of Thyroid Disorders, Including Thiouracil." Dr. Hekimian is assistant professor of medicine at the University of Buffalo School of Medicine.

This program was arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York, in co-operation with the State Health Department.

#### Monroe County

Dr. John L. Norris, of Rochester, addressed the Western Division of the Practical Nurses of New York at a meeting in Monroe County Hospital on October 3. His topic was "Communicable Diseases."

#### Nassau County

A regular monthly meeting of the county society was held on October 31 in Mercy Hospital Auditorium in Rockville Centre.

The speaker was Dr. Frank L. Meleney, associate professor of clinical surgery at the College of Physicians and Surgeons, Columbia University. His subject was "Penicillin."

This lecture was one of a number of programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York.

Dr. Louis H. Bauer, of Hempstead, a past president of the county society, is now one of the nine members of the board of trustees of the American Medical Association.

#### New York County

H. R. Ickelheimer, New York banker who died in

1940, bequeathed \$25,000 to Cornell University for cancer research.

Dr. René J. Dubos, of the Rockefeller Institute for Medical Research, New York City, spoke on tyrothricin and gramicidin at the *Herald Tribune* Forum in New York City on October 17, 1944.

The Clinical Pathological Conferences of the Mount Sinai Hospital were resumed on October 18 at 3:30 p.m. in Blumenthal Auditorium. They will be continued weekly at that time. Members of the medical profession are invited to attend.

Dr. Bret Ratner was one of the guest speakers at the refresher course given by the Medical College of the State of South Carolina on November 1 and 2 in Charleston, South Carolina. He spoke on "The Allergic Child" and conducted a round-table discussion on "Eczema in Children."

#### Oneida County

Dr. F. K. Gifford has opened an office in Rome, where he will practice as a urologist.

Dr. Gifford is also serving his second term as county coroner.\*

The October meeting of the county society was held at Rhoads Hospital at 8:00 p.m. on October 10. Capt. Daniel Feldman spoke on "War Injuries of the Extremities"; there was also clinical demonstration.

The Utica Academy of Medicine met at the Hotel Utica on October 19 for dinner at 7:00 p.m., followed by a scientific program at 8:00 p.m. The speaker was Dr. Francis R. Irving, of Syracuse, who discussed "Caudal Anesthesia in Obstetrics" and illustrated the lecture with lantern slides and motion pictures. The discussion was opened by Drs. Robert Sloan and B. Victor Di Iorio.

Dr. T. Wood Clarke, of Utica, conducted a half-day class on allergy of the central nervous system at the five-day intensive graduate course in allergy which was given by the American College of Allergists in St. Louis, November 4-8.

#### Onondaga County

"The faster medicine changes, the more certain it is that men and women in medicine must train themselves differently from their predecessors," Dr. C. Sidney Burwell, Dean of the Harvard Medical School, told forty-six Syracuse University College of Medicine graduates.

Dr. Burwell addressed the graduates at commencement exercises on September 24 in the medical school auditorium, at which he received an honorary doctor of science degree.

Three women were the only civilians in the class. Thirteen naval students among the graduates were commissioned lieutenants, junior grade, in the U. S. Naval Reserve by Lt. (j.g.) James H. Roberts, and

[Continued on page 2510]

# Announcing

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**Superficial Fungous Infection**  
**ATHLETE'S FOOT**

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 ONE-OUNCE TUBES  
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TWO-OUNCE SIFTER CARTONS

[Continued from page 2508]

the thirty army men were commissioned first lieutenants in the army medical reserve by Lt. William D. Randall, company commander.\*

#### Ontario County

"John Barleycorn" was the title of a paper read by Dr. Margaret T. Ross at the October meeting of the Canandaigua Medical Society on October 6. Members of the society were the guests of Dr. A. W. Armstrong at his home.

Dr. Malcolm Blakeslee, of Shortsville, was host to the members for the meeting on November 3, at which Dr. F. C. McClellan, acting president, was reader.\*

#### Orange County

Dr. Daniel Burman, a veteran of World War II and an eye, ear, nose, and throat specialist, has opened an office in Newburgh.\*

#### Queens County

The Rockaway Medical Society held a meeting on October 19 at the Lawrence Village Parkhouse, with Dr. Benjamin Jablons, chief of vascular diseases at Beth David Hospital, New York City, as the speaker. The discussion was illustrated by motion pictures and lantern slides.

Dr. Herman Gliboff, president of the society, presided.

. . .

Industrial medicine was the subject of the scientific program at the county society's stated meeting on October 31. The three addresses of the evening were: "The Evaluation of the Health Status of the Worker," by Dr. William A. Sawyer, medical director of the Eastman Kodak Company, Rochester, New York; "The Integration of Industrial Hygiene in Medical Practice," by Dr. J. G. Townsend, medical director of the Industrial Hygiene Division of the U.S. Public Health Service; and "Industrial Medicine and the General Practitioner," by Dr. C. F. Yeager, chairman of the committee on industrial health of the Connecticut State Medical Society.

The scientific session was preceded by a dinner at the Forest Hills Inn.

#### Rensselaer County

Dr. J. M. Purcell, of Troy, an alumnus of the New York Medical College, class of 1894, was presented with a gold diploma at the fiftieth anniversary of the class on September 28.

#### Richmond County

The United Medical Service, Inc., has been endorsed by the county medical society, Dr. D. V. Catalano has announced.

#### Saratoga County

On September 15 the Metropolitan Life Insurance Sanatorium at Mount McGregor honored Dr. William H. Ordway, physician-in-charge, for his twenty-five years of service to the institution.

Dr. Ordway has engaged in numerous medical activities in his community. He is a past-president of the county medical society and during the present war has served as chief of the Emergency Medical Saratoga Civilian Defense Organization.

#### Seneca County

The regular annual meeting of the county so-

cietiy was held at Willard State Hospital on October 12. The business meeting at 10:30 A.M. was followed by luncheon at 12:30 P.M. and a scientific session at 2:00 P.M. The speakers were Dr. Leon H. Griggs, associate professor of dermatology at Syracuse University College of Medicine, who discussed "Some Common Forms of Skin Diseases," illustrated by colored lantern slides, and Dr. Angelo Raffaele, of the Willard State Hospital staff, who gave a lecture entitled "Electroshock Therapy in Dementia Praecox." About thirty members and guests were present at the meeting.

The following officers were elected at the meeting, to take office in January 1, 1945: president, Dr. Bruno Riemer, of Romulus; vice-president, Dr. Stanley B. Folts, of Lodi; censors, Dr. R. F. Gibbs, of Seneca Falls, Dr. E. P. McWayne, of Fayette, and Dr. Roy E. Wallace, of Seneca Falls; delegate to the State Society, Dr. W. M. Pamphilon, of Willard; alternate, Dr. Bruno Riemer; delegate to the seventh district branch, Dr. F. W. Lester, of Seneca Falls; and alternate, Dr. A. F. Baldwin, of Waterloo.

#### Sullivan County

At the annual meeting of the county society held in Liberty on October 11 the following officers were elected for the ensuing year: president, Dr. Ralph S. Breakey, of Monticello; vice-president, Mr. Nathan Nemerson, of Monticello; secretary-treasurer, Dr. Deming S. Payne, of Liberty; censors—Drs. Morris A. Cohn, of Monticello, Cornelius Duggan, of Bethel, Luther F. Grant, of Liberty, Jacob Kornblum, of Monticello, and George R. Mills, of Callicoon; compensation committee—Drs. Harry Golembe and L. F. Grant; alternates to compensation committee—Drs. Mills and Nemerson; delegate to the State Society, Dr. Benjamin Abramowitz, of Monticello; alternate delegate, Dr. Harry Golembe.

#### Tompkins County

A regular meeting of the county society was held at Herman M. Biggs Memorial Hospital in Ithaca on October 17. The program was a special one on cancer, sponsored by the Medical Society of the State of New York and the Division of Cancer Control of the New York State Department of Health.

The speakers at the afternoon session were Dr. John H. Garlock, attending surgeon, Mount Sinai Hospital, New York City, whose subject was "Carcinoma of the Colon," and Dr. John J. Morton, professor of surgery at the University of Rochester School of Medicine and Dentistry, who read a paper on "Bone Tumors."

Dr. Andrew H. Dowdy and Dr. Frank E. Adair were the speakers at the evening session. Dr. Dowdy, who is associate professor of radiology at the University of Rochester School of Medicine and Dentistry, gave an address entitled "Epithelioma of the Skin." "Carcinoma of the Breast" was the topic of Dr. Adair, who is executive officer at Memorial Hospital in New York City and president of the American Cancer Society.

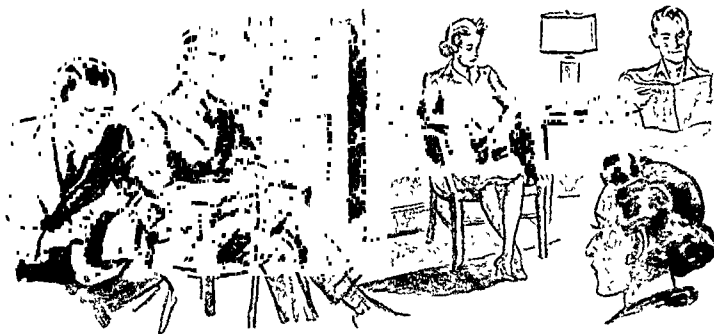
Dinner was served at the Hospital between the afternoon and evening programs. Eighty-five persons attended the meeting.

#### Washington County

At the meeting of the county society held on October 10 the following officers were elected and appointed: president, Dr. Z. V. D. Orton, Salem; vice-president, Dr. L. A. White, Whitehall; secre-

[Continued on page 2512]

# FOR *Convenience* AND FLEXIBILITY OF DOSAGE



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are available in dosages from 1 mg. to 15 mg. • For parenteral administration Bethiamin ampuls are available up to 100 mg. per cc. Thus Bethiamin places at the physician's hands dependable vitamin B<sub>1</sub> medication in the most convenient forms.

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[Continued from page 2510]

tary, Dr. Denver M. Vickers, Cambridge; treasurer, Dr. Charles A. Prescott, Hudson Falls; censors—Drs. J. L. Byrnes, Hudson Falls, W. S. Bennett, Granville, and T. C. Healey, Argyle; delegate to the State Society, Dr. D. M. Vickers; public relations committee, Dr. M. A. Rogers, Greenwich, *chairman*: committee on legislation, Dr. W. S. Bennett, Granville, *chairman*: war participation committee—Drs. E. V. Farrell, Whitehall, R. E. Borrowman, Fort Edward, and Dr. D. F. MacArthur, Greenwich.

### Westchester County

Maj. Nicholas R. Locascio, former Yonkers and New York City physician who is prominent in the field of psychiatry, has been appointed Post Surgeon and Commanding Officer of the Army Station Hospital at Pine Camp, New York, Col. L. R. Clement, post commander, has announced.

He succeeds Col. Dunlap P. Penhallow, who has reverted to inactive status with the Army Medical Corps. Colonel Penhallow, post surgeon and Pine Camp Station Hospital commanding officer for more than two years, received retirement orders about two months ago but these were subsequently revoked and he continued to perform his duties. Recently he was again reverted to inactive status and has taken up his residence with his family in Philadelphia, New York.

Active in the Reserve Officers Corps from 1931 until he reported for active duty on June 2, 1941 at Ft. Hancock, New Jersey, Major Locascio has served with the Army Medical Corps in various capacities. He entered the service with the rank of captain, which he received in 1935, and on February 1, 1942, was promoted to major. During his period of service at Ft. Hancock, from June 2, 1941 to October, 1943, Major Locascio was post psychiatrist, chief of medical service, plans and training officer for the Station Hospital, and interval post surgeon. He played a prominent part in improvements in hospital facilities at Ft. Hancock and one of the major tasks assigned him while there was the training of a large number of Army nurses.

On October 9, 1943, Major Locascio was ap-

pointed post surgeon and chief psychiatrist of Eastern Branch, U.S. Disciplinary Barracks at Green Haven, New York. He remained in that capacity until March 22, 1944, when he was transferred to Pine Camp as chief of medical service and post psychiatrist of the Station Hospital.

Graduated from Fordham Preparatory School in 1923, the major received his A.B. degree from Fordham College in 1927 and his M.D. degree from Georgetown University Medical School in 1931. During the early part of his training at Georgetown, Major Locascio had as one of his instructors Colonel Penhallow, whom he is now succeeding at Pine Camp. He was granted his license to practice medicine in New York and Maryland in 1931 and he did postgraduate work in neuropsychiatry at Harvard Medical School and the Army Medical School, Walter Reed General Hospital, Washington, D.C.

From 1933 to 1941, Major Locascio was associated with the neurologic and psychiatric departments of the following hospitals: Morrisania City Hospital, Columbus Hospital, Mother Cabrini Memorial Hospital, City Hospital, and Welfare Island Dispensary all in New York City, and St. Joseph's Hospital in Yonkers. At the latter institution, he was a member of the Board of Directors. He also is a qualified examiner for the Department of Mental Hygiene of the State of New York.

Major Locascio is a member of the American Medical Association, Medical Society of the State of New York, Bronx County Medical Society, Yonkers Academy of Medicine, Bronx Medical Fraternity, American Psychiatric Association, and the Association of Military Surgeons.

### Wyoming County

The county society held its fourth quarterly meeting for the year on October 11, at which time the following officers were elected: president, Dr. A. Kosseff, Attica; vice-president, Dr. M. M. Graves, Warsaw; secretary, Dr. G. W. Mairn, Warsaw; delegate to the State Society, Dr. H. S. Martin, Warsaw; alternate delegate, Dr. G. S. Baker, Castile; censors—Drs. M. T. Greene, Castile, L. H. Humphrey, Silver Springs, and G. A. McQuilkin, Varysburg.

### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Charles B. Adams	70	P. & S., N.Y.	October 18	Manhattan
Thomas D. Brown	71	Bellevue	October 6	Ogdensburg
Charles L. Christiernin	66	Harvard	October 18	Manhattan
William H. Egan	72	Bellevue	August 31	Manhattan
Erwin W. Hollandt	35	Rochester	October 11	Ilion
Anna C. de la Motte	84	Cornell	October 22	Brooklyn
John W. Moore	66	Vanderbilt	October 6	Gloversville
William J. Narey	75	N.Y. Univ.	October 13	Manhattan
John C. Peters	36	N.Y. Hom.	October 6	Amityville
Charles M. Rosenthal	35	Maryland	September 1	Brooklyn
Edwin T. Tellman	35	Rush	July 16	Palmyra
Benjamin Van Campen	65	Buffalo	September 27	Olean
John T. Walsh	70	Univ. & Bell.	October 17	Manhattan

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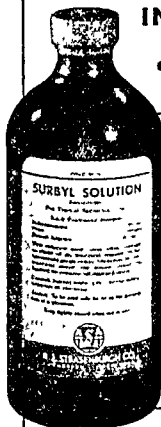
Actively alkaline. Contains no narcotics, no injurious drugs. Consists of alkali salts, fruit acids, and sugar, and makes a pleasant effervescent drink.

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Six patients, having had an attack of acute asthma from two to five days, were thus treated (*Dr. Maietta, N. E. J. Med., Vol. 227, p. 985*). All of them responded fairly well, but not satisfactorily to injections of epinephrine. Four of them received one intramuscular injection of ETHER-IN-OIL, the remaining two received 2 each. Within two hours, the asthmatic symptoms were rapidly controlled. The patients became quieter, were able to breathe more easily and expectorate more freely. Thereafter, the usual palliative medications effectively controlled the symptoms.

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# Hospital News

General Hospital's "pest" house, in Jamestown, which for several decades housed all manner of contagious cases, is to be torn down.

The Health and Hospital Board has advertised for bids to demolish the one-story frame structure and for salvaging of the electrical, heating, and plumbing materials it houses.\*

The three-week drive for funds to pay off the \$33,000 obligation of the Margaretville Hospital officially closed on August 25, with a total of \$17,260.

The reception center at Camp Upton, which has been an induction or training center for hundreds of thousands of men in two wars, will serve in the future as a hospital for convalescent soldiers, it has been announced by the public relations office.

Within a short time the Army's newest hospital, to be known as Second Service Command Hospital Unit 1234, is expected to be handling 3,000 patients. The center is capable of being developed for 5,000 patients.

The new hospital unit will be under the supervision of Col. Edward A. Coats, Jr.\*

An army hospital, the first of its kind in Chungking, has been opened at Kiangpei across the Yangtze River. General Ho Ying-chin, in his opening address, said that the hospital would meet a long-felt need to offer adequate medical care to officers and men. "Wartime limitations have considerably narrowed the scope of army hospital facilities," said General Ho. "The establishment of a well-equipped and well-staffed army hospital in a well-chosen site can be a good example to other parts of the country."\*

A study of practical nurse placement registries in the State preliminary to setting up a model registry in New York City was approved by the Committee for the Recruitment and Education of Practical Nurses at its initial fall meeting on September 19. The committee approved a budget appropriation of \$5,000 to finance the research, which will take a year to complete, and will cover salaries, hours, conditions of work, and fees.

Miss Hilda Torrop, executive secretary of the committee, said that the study would help to relieve a situation that at present is "chaotic," with few nurses available, and with little sound counselling being given by registries. On the basis of material gathered, a placement office will be opened here, which, she said, would be the "best of its kind" and manned by a well-prepared staff.

The war has given the public a rapid education, she added, in what services a practical nurse can render, with the result that 5,000 additional trained women are needed now, and will continue to be needed in postwar rehabilitation and public health work.

To meet the demands, the committee will intensify its campaign by doubling the number of refresher

courses given and by developing new fields for recruitment, especially within hospitals and schools. Fall enrollment in State-approved schools was reported to be 100 per cent higher than that of last year, with students averaging 25 years of age.

For its expanding activities, the committee will seek a budget of \$30,000 for the coming year. Dr. Beeckman J. Delatour, chairman of the committee, presided at the session.\*

The sum of \$600 was raised and turned over to the Peekskill Hospital on September 2 at an entertainment held at the Hebrew Community Center of Mohegan Park Association, it was reported by Morris H. Bannister, president of the Board of Directors of the Peekskill Hospital, Inc.

About 125 persons attended the benefit, which was arranged and staged by Louis Liebman and Samuel Redlick, of Mohegan. Robert E. Dempsey, a member of the Hospital Board of Directors, accepted the gift on behalf of the Peekskill Hospital.\*

Edgewood State Hospital, at Deer Park, leased to the Federal Government in June, is now ready to receive soldier patients. Situated near Mason General Hospital, Brentwood, the new unit has accommodations for 2,300 patients.

Edgewood was built by the State four years ago, but its completion was held up after the outbreak of the war, when it became certain that personnel to staff the hospital could not be found.

Under the terms of the lease the War Department will pay the State for actual expenses incurred, in addition to depreciation costs, and will restore the structure to its present condition following the termination of Army occupancy.\*

Announcement was made on September 5 by William H. Reynolds, president of the Rockaway Beach Hospital, and A. Joseph Geist, chairman of the Welfare Committee of the Hospital and vice-president of the institution, that the members of Temple Beth-El of Rockaway Park had pledged \$25,000 to the \$350,000 quota set to be raised in the current drive for the execution of a new building for the hospital.

Mr. Geist also revealed that a number of other substantial gifts and contributions have been received at the headquarters of the campaign committee for the drive located at 279 Beach 116th Street, Rockaway Park.

Mr. Geist announced that several memorial gifts have also been received to date. Under a memorial and endowment plan a \$7,300 contribution can be used for either an operating room or a delivery room memorial, \$2,500 for the cost of a men's, women's, or children's pavilion; sun porch, \$1,500; a bed, \$250. Any contributor of \$100 or more may have a bronze memorial plaque, Mr. Geist said, bearing the name of the donor or the person in whose memory the gift was made.\*

\* Asterisk indicates that item is from a local newspaper.



## FOR THE GOOD OF MANKIND

**T**HE story of Penicillin is a shining example of international cooperation for the good of mankind.

From Fleming's observations in 1929, through the pioneer work of Florey's research team, to the large-scale production of Penicillin by the American Pharmaceutical Industry, the story is one of unprecedented teamwork which has extended far beyond national boundaries.

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individual British and American scientists, the Rockefeller Foundation, the National Research Council, the U. S. Department of Agriculture, the War Production Board, the American Pharmaceutical Industry, and the Medical Services of the British and American Armed Forces, has never before been equaled.

Cheplin Biological Laboratories, Inc. are proud to be a member of this international team.



### CHEPLIN BIOLOGICAL LABORATORIES, INC.

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Syracuse, New York

[Continued from page 2514]

Eighty-seven Spars, the first group of women received in a Hospital Corps training school of the Coast Guard, were graduated recently at Columbia University's College of Pharmacy.

Having completed a twelve-week course in nursing and hospital laboratory procedure, the graduates will go immediately to Spar bases and marine hospitals. Many are expected to be sent overseas after approval of a bill awaiting the President's signature. \*

. . .

Air-borne armies, with perhaps the highest rate of casualties among the armed forces, will soon have a complete medical and surgical unit—the 130th Evacuation Hospital—first mobile hospital to be transported by air.

The 130th was tested for the first time in air-borne maneuvers at Camp Maskall, North Carolina, when fifty-five transports flew the entire hospital into an airfield and three hours later had it ready to handle casualties.

Parachute and air-borne troops in Normandy and Holland have had medical aid men with them who have been able to give emergency treatment, but serious cases had to be evacuated by air. Now the evacuation hospital can be flown to the wounded.

The 400-bed hospital, flown by C-47's in two echelons, can support 25,000 troops, the equivalent of three paratroop or two regular divisions.

In the hospital thirty-eight medical officers, forty nurses, and enlisted medical technicians work in six operating teams: a neurosurgical and thoracic, orthopaedic, maxillary-facial, and neurologic plastic and two general surgical teams.

Three hours after the first thirty planes land with surgeons, surgical units, eight wards, three days'

supplies, x-ray equipment, and receiving and evacuation units, the hospital is ready for operation—saving lives with immediate surgical care and relieving the air-borne troops who had been caring for the wounded. \*

. . .

Expanding opportunities for nurses after the war, especially in the public health field, were outlined on September 27 by Miss Elizabeth Phillips, assisting director of the Visiting Nurse Service of New York, at an institute preparing a group of nurses for visits to 400 colleges, where they will try to interest students in nursing careers.

Miss Phillips was one of several speakers at the first session of a four-day conference with educational and nursing leaders held at the Visiting Nurse Service headquarters under joint sponsorship of the National Nursing Council for War Service and the United States Cadet Nurse Corps.

"Returning service men who have been subjected to good health programs for a year or two will come home with changed views on medical care," she declared. "They will bring back a new appreciation of good health programs, including the immunizations which they have taken as a matter of course to give them security from disease. They will want their families to have similar good care."

Miss Mary Elizabeth Tennant, nursing fellowship adviser of the Rockefeller Foundation, pointed out that there were careers ahead in countries all over the world for a selected group of well-trained and experienced nurses. She cited those now working in South and Central America with the Office of Inter-American Affairs and those who will later be sent to liberated countries by the United Nations Relief and Rehabilitation Administration. \*

## DR. DUBLIN NAMED RED CROSS COORDINATOR

Basil O'Connor, chairman of the American Red Cross Central Committee, announced on September 20 that Dr. Louis I. Dublin, second vice-president and statistician of the Metropolitan Life Insurance Company, has been named his assistant.

Dr. Dublin's duties, Mr. O'Connor said, will include acting as coordinator of the various operating divisions of the agency and serving as liaison official between the chairman and the operating vice-chairmen. He will be on loan from Metropolitan for a limited period and will devote full time to Red Cross work.

Dr. Dublin has published many books and pamphlets on public health and on the economics of health. He has been called upon by the heads of many Federal and state agencies to make health and economic surveys and to advise on various health projects. He served in 1942 on a commission appointed by Henry L. Stimson, Secretary of War, to study the operations of the Surgeon General's Office and in 1943 made a similar study for Vice-Admiral Ross T. McIntire, Surgeon General of the Navy.

## PARALYSIS FOUNDATION ALLOCATES \$50,000 FOR FELLOWSHIPS

The National Foundation for Infantile Paralysis has announced an allocation of \$50,000 for fellowships in health education.

Under the program, developed with the United States Public Health Service, qualified men and women began in the fall nine months of academic work and three months of field experience to train them to help fight poliomyelitis.

A fellowship covers a stipend to the trainee of \$100 monthly for twelve months, tuition and university fees to the school, and expenses for field service.

A B.S. degree or its equivalent and citizenship are prerequisites for a fellowship. Women between 19 and 40 years of age and men over 30 are eligible. Applications are obtainable from the Surgeon General, United States Public Health Service, Washington 14, D. C.

Twenty-eight fellowships were awarded by the National Foundation in September.

The Public Health Service hopes to be able to give these grants again in 1945.

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whooping  
cough*

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**GIVES EXCELLENT RESULTS**

Cuts short the period of the illness and relieves the distressing spasmodic cough. Also valuable in other Persistent Coughs and in Bronchitis and Bronchial Asthma. In four-ounce original bottles. A teaspoonful every 3 to 4 hrs.  
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# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

## REVIEWED

**Forsdike's Textbook of Gynaecology.** By J. H. Peel, B.M. Revised edition. Octavo of 440 pages, illustrated. New York, Grune & Stratton, 1944. Cloth, \$5.75.

Much smaller than the average text, this little book covers the subject very well indeed. The material is well arranged, the text is simple and clear, and the illustrations, on the whole, are excellent. The medical student and the general practitioner will like this book very much. It will answer all their questions satisfactorily and quickly.

CHARLES A. GORDON

**Manual of Human Protozoa.** By Richard R. Kudo, D.Sc. Duodecimo of 125 pages, illustrated. Springfield, Ill., Charles C Thomas, 1944. Cloth, \$2.00.

In this compact handbook of 125 pages are presented the distinguishing characteristics of the protozoa, pathogenic and nonpathogenic, which may be encountered in man. There is included with each form a brief note concerning geographic distribution of the parasite and the disease it produces. Identification is facilitated by descriptive text and beautiful hand-drawn illustrations in black and white. The technic of examining and staining is described.

The value of this manual as a ready reference handbook would probably have been enhanced if certain of the plates—particularly of malaria plasmodia and iodine-stained cysts of intestinal protozoa—could have been reproduced in color.

E. J. TIFFANY

**Technic of Electrotherapy and its Physical and Physiological Basis.** By Stafford L. Osborne, M.S., Ph.D., and Harold J. Holmquest, B.S., B.S. (M.E.). Octavo of 780 pages, illustrated. Springfield, Ill., Charles C Thomas, 1944. Cloth, \$7.50.

This is a clear and thorough presentation of a difficult subject, approached from a physical and physiologic aspect, with simplified means of treatment applications.

It is divided into four groupings: direct current, electrical muscle stimulation, thermogenic and ultraviolet radiation, high-frequency current, including a most timely and comprehensive discussion of hyperpyrexia by artificial methods.

This is a splendid work for the general practitioner and the physiotherapist.

JESSE SCHEPPS

**Cosmetology in the Negro. A Guide to Its Problems.** By Gerald A. Spencer, M.D. Duodecimo of 127 pages, illustrated. New York, Arlain Printing Co., 1944. \$2.50

In his preface the author states that this little book is the only work of its kind dealing exclusively with dermatologic conditions affecting the Negro race. Its contents comprise some eighteen chapters, a glossary of terms used, and an excellent index.

Appreciating the serious need for scientific information among the countless hosts of our colored neighbors throughout the country now engaged in the practice of cosmetology, Dr. Spencer has produced a most interesting and comprehensive exposition of

his subject which should have a large sale among those who need its help most. The book is profusely illustrated with excellent photographs and some crude but entirely satisfactory line drawings.

NATHAN T. BEERS

**Intravenous Anesthesia.** By R. Charles Adams, M.D., M.S. (Anes.). Octavo of 663 pages, illustrated. New York, Paul B. Hoeber, Inc., 1944. Cloth, \$12.

The author has minutely reviewed the literature on intravenous anesthesia and has collated it well into one volume, which is an exhaustive treatise on this subject. Its appearance is timely, as the growing interest in this method is now reaching a peak, particularly the use of the barbiturates as anesthetics. All other agents are also considered—e.g., intravenous ether, paraldehyde, alcohol, and morphine.

The reader will find them of value, as they represent the methods of the Mayo Clinic, which pioneered and forwarded intravenous anesthesia to its present-day acceptable status. The volume is well illustrated.

F. PAUL ANSBRO

**The Medical Clinics of North America.** Boston Number. September, 1943. Octavo of 245 pages. Philadelphia, W. B. Saunders Co., 1943. Six numbers a year. Cloth, \$16 net; paper, \$12 net.

This issue of the *Clinics* contains a series of short and pithy articles, dealing with the present status of specific methods of treatment. The subjects are presented from the point of view of the individual authors rather than in the form of exhaustive reviews of the literature.

The articles entitled "The Treatment of Major and Minor Burns" by R. H. Aldrich; "The Present Status of Hormone Therapy in Gynecology" by George Van S. Smith, and "Recent Advances in Vascular Physiology and Their Therapeutic Implications" by Robert W. Wilkins should be of particular value.

ARTHUR SHAPIRO

**Medical Diagnosis. Applied Physical Diagnosis.** Edited by Roscoe L. Pullen, M.D., Quarto of 1106 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$10.

This book has attempted a well-nigh impossible task—to cover a large field of medicine in one volume of 1,100 pages, written by many contributors. The result, necessarily, is a frequently incomplete coverage of various specialties, although each contributor has exhibited an excellent knowledge of his subject and its literature. The illustrations are numerous, clear, and highly instructive. The book is splendidly gotten up and is a credit to its publishers.

MEYER A. RABINOWITZ

**Principles and Practices of Inhalational Therapy.** By Alvan L. Barach, M.D. Octavo of 315 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1944. Cloth, \$4.00.

The scientific world is greatly indebted to Dr.

[Continued on page 2520]

Still widespread and, when searched for, frequently found

# Nutritional Anemia

Various clinical subdivisions, such as secondary anemia, hypochromic anemia and chlorosis, now included under the heading nutritional anemia

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a readily absorbable organic iron

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COLLO SUL Cream is greaseless  
yellow color and a pleasing odor  
stain light colored or white hair

has an attractive pale  
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Trade mark Reg. U. S. Pat. Off.

## R<sub>x</sub> COLLO-SUL CREAM

Sign: Massage into scalp daily, or apply locally as a shampoo until almost dry, then gradually wet with water and rub into a lather. Rinse out with warm water

<sup>1</sup> Diseases of the Skin Sutton & Sutton 1939, p. 99

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[Continued from page 2518]

Alvan L. Barach for most of the recent advances in the field of inhalational therapy. All of Dr. Barach's recent contributions to this field and a complete summary of the present-day status of inhalational therapy are to be found in this excellent book.

A wealth of information, hitherto available only in scattered articles in many medical journals, is here brought together for the first time. The only suggestion that the present reviewer would make is that a chapter on the pertinent physiology of the lung might have been included early in the book. This information is, however, obtainable from the book but is scattered throughout the many chapters.

MILTON PLOTZ

**Textbook of Physiology.** By William D. Zoethout, Ph.D., and W. W. Tuttle, Ph.D. Eighth edition. Octavo of 728 pages, illustrated. St. Louis, C. V. Mosby Co., 1943. Cloth, \$4.75.

This is the eighth edition of a well-known popular text suitable for an advanced undergraduate course in physiology. The presentation is clear and concise. The figures, although a little old-fashioned, are well chosen and adequately reproduced.

The book should be useful for advanced students who wish to make a preliminary rapid survey at a more elementary level or to elementary students who are sufficiently interested to use a fairly advanced text.

ARTHUR SHAPIRO

**The Electrocardiogram. Its Interpretation and Clinical Application.** By Louis H. Sigler, M.D. Octavo of 403 pages, illustrated. New York, Grune & Stratton, 1944. Cloth, \$7.50.

Dr. Sigler is to be congratulated on having produced this excellent volume on electrocardiography.

Every aspect of the field is thoroughly covered, although obviously no effort has been made to produce a volume as encyclopedic as that of Katz.

The theoretic aspects of electrocardiography are thoroughly covered, followed by an extensive study of the electrocardiogram in various diseases of the heart and many other conditions in which the electrocardiogram may be affected. The reproductions of tracings are good and the diagrams are uniformly excellent. The style is good and the book is attractively printed and indexed. In short, the volume can be highly recommended to all. In fact, it is doubtful whether the general practitioner could purchase a more satisfactory volume at this price.

MILTON PLOTZ

**Backache and Sciatic Neuritis. Back Injuries—Deformities—Diseases—Disabilities: With Notes on the Pelvis, Neck, and Brachial Neuritis.** By Philip Lewin, M.D. Octavo of 745 pages, illustrated. Philadelphia, Lea & Febiger, 1943. Cloth, \$10.

Low-back pain has been the cause of much tribulation to every physician. This book gives an exhaustive review of the numerous causes and therapeutic procedures. The volume treats this major subject thoroughly, meticulously, and may be regarded as a reference source for the numerous complaints referable to the back which present themselves so often in every physician's office.

A. M. RABINER

**Radiation and Climatic Therapy of Chronic Pulmonary Diseases.** Edited by Edgar Mayer, M.D. Octavo of 393 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$5.00.

Dr. Mayer, together with twenty-two collaborators, each writing in his own specialized field, has produced this practical work for both the general practitioner and the specialist. The writers do not attempt to prove this type of therapy to be the only treatment, but rather try to make it applicable to practitioners who come in contact with tuberculosis in general and in specialized fields.

JOHN J. HAUFF

**Allergy in Practice.** By Samuel Feinberg, M.D. Octavo of 798 pages, illustrated. Chicago, Year Book Publishers, Inc., 1944. Cloth, \$8.00.

The entire field of allergy is covered in this excellent work. One fifth of the book is devoted to allergic rhinitis, urticaria, angioneurotic edema, atopic and contact dermatitis, allergy of the eye, and of the gastrointestinal tract. Asthma and hay fever are exhaustively presented. In addition, O. C. Durham has written a ninety-page section on pollens and pollen allergy, in which the available data on pollens, hay-fever plants, etc., is assembled. The chapter entitled "Allergy to Fungi," with its microphotographs of common allergenic fungi, is a comprehensive account of this relatively new field. Treatment is given in detail and occupies two large chapters of the book. To facilitate ready reference the experimental, theoretic and controversial material is printed in smaller type than the essential, clinical information.

This volume can be heartily recommended to both the allergist and the general practitioner.

MAX HARTEN

**A National Health Service.** By the Ministry of Health, Department of Health for Scotland. Octavo of 85 pages. New York, Macmillan Co., 1944.

This blueprint of health service projected for the people of Scotland is part of the scheme proposed by the British Parliament for the provision of the full benefits of social security to the people of the British Isles. The lack of sufficient space prevents discussion of its many controversial aspects, the most important of which are the compulsory nature of the insurance provisions and the possibility of the physician's becoming an employee of the State, both of which we in this country are, of course, completely opposed to.

It is apparent that changes in our own methods of payment, for practice, at least, are due for revision and it behooves all of us to study all plans proposed with great care and with an open mind.

BENJAMIN M. BERNSTEIN

**Rorschach's Test. I. Basic Processes.** By Samuel J. Beck, Ph.D. Octavo of 223 pages. New York, Grune & Stratton, 1944. Cloth, \$3.50.

The Rorschach's test has now achieved a definite position as a psychologic tool to be employed by psychologists as well as psychiatrists. The volume under discussion is a sequel to a previous book published by the same author in 1937.

Dr. Beck has done much to elucidate Rorschach's method and has contributed materially to publicize it. The two books by the author serve a useful purpose and are recommended to all who are interested in psychiatry.

IRVING J. SANDS

**Tuberculosis of the Ear, Nose, and Throat: Including the Larynx, the Trachea, and the Bronchi.** By Mervin C. Myerson, M.D. Octavo of 291 pages, illustrated. Springfield, Ill., Charles C Thomas, 1944. Cloth, \$5.50.

*Tuberculosis of the Ear, Nose, and Throat*, by

Myerson, is an excellent expression of a large clinical experience by the author and his associates, supplemented by a notable bibliography.

Tuberculosis in otolaryngology is uncommonly met in the usual clinic and private daily practice nowadays, and hence, because of lack of experience, is too often not properly recognized. This book should prove a valuable aid, therefore, to otolaryngologists in general, most of whom are not associated with institutions where tuberculosis is seen in its many phases

CHAS. R. WLEIH

**The Romance of Medicine. The Story of the Evolution of Medicine from Occult Practices and Primitive Times.** By Benjamin Lee Gordon, M.D. Octavo of 624 pages, illustrated Philadelphia, F. A. Davis Co., 1914. Cloth, \$5.00

Not actually a history of medicine, this book is, nonetheless, a very interesting account of the growth of medical knowledge from its roots in the dim past. Primitive medical concepts are discussed, and the persistence of many of them to the present day is pointed out. Man will always be superstitious.

The story is well told and, above all, entertaining. The binding, paper, and typography are a credit to the publisher. A good book for your library.

CHARLES A. GORDON

**The Dental Treatment of Maxillo-Facial Injuries.** By W. Kelsey Fry and others. Duodecimo of 434 pages, illustrated Philadelphia, J. B. Lippincott Co., 1944. Cloth, \$6.50

This volume is a result of the authors' experience acquired in treating maxillofacial injuries resulting from the air raids on London and from the injuries to military personnel. It is comprehensive and one of the most complete treatises of this type that I have ever had the pleasure to see. It is comprised of the subject-matter of lectures and demonstrations given to members of H. M. Forces at East Grinstead Maxillofacial Centre.

The reviewer recommends this book to all members of the dental profession who are treating maxillofacial injuries and to all plastic surgeons.

LAWRENCE J. DUNN

**The Jews and Medicine—Essays.** By Harry Friedenwald, M.D. (In two volumes.) Octavo of 817 pages, illustrated. Baltimore, Johns Hopkins Press, 1944. Cloth, \$3.75 per volume, \$7.50 per set.

In two volumes, Dr. Friedenwald presents a series of essays on the contributions of the Jewish physicians throughout the ages. The reader appreciates the scholarly and painstaking character of the chapters in these two volumes. Every educated physician should find a place for these monographs on his bookshelf.

A. M. RABINER

**The Analytical Chemistry of Industrial Poisons, Hazards and Solvents.** By Morris B. Jacobs, Ph.D. Chemical Analysis, Vol. 1. Second revised reprint. Octavo of 661 pages, illustrated. New York, Interscience Publishers, Inc., 1944. Cloth, \$7.00

The so-called "second revised reprint," after a cursory review, reveals no changes from the 1941 edition of this book. A 1944 copyright for a reprinting is misleading, giving the unwary the impression that the later copy is a new edition.

This book is still a worth-while reference work for practicing physicians, because it does list the physical effects of industrial poisons.

CHARLES SOLOMON

(Continued on page 2522)

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In this edition new material on a large number of subjects has been included. Attention is given to military aspects of the subject and 21 new illustrations are included. By C. Langton Hewer, M.B., D. A. London. 141 illus; 343 Pages; \$5.50 (1944)

### • HUGHES'

#### Practice of Medicine. 16th Edition

Hughes presents a concise survey of practical medicine incorporating the many newly recognized methods in treatment, diagnosis, vitamin therapy, etc. By Burgess Gordon, M.D., Jefferson Medical College. 36 illus; 791 Pages; \$5.75 (1942)

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#### Diagnosis, Prevention and Treatment of Tropical Diseases. 7th Ed.

The material is based upon many years' experience and research in the field of tropical medicine and on first hand knowledge of the latest developments around the world. By Richard P. Strong, M.D., D.S.M. Eminent Professor, Harvard University. 398 illus; 1827 Pages; Two Volumes; \$21.00 (1944)

### • GOULD'S

#### Medical Dictionary. 5th Ed.

This dictionary incorporates many important features of special service to the general practitioner. Illustrated in Colors; 174 Tables; Flexible or Rigid Covers; \$7.00; Thumb Indexed \$7.50 (1941)

### • STRECKER & EBAUGH

#### Practical Clinical Psychiatry. 5th Ed.

This book gives examples of various psychoses for comparison with each con-

hood is included. By E. A. Strecker, M.D., University of Pennsylvania and F. G. Ebaugh, M.D., University of Colorado. 57 illus; 728 Pages; \$5.00 (1940)

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[Continued from page 2521]

**Stop Worrying and Get Well.** By Edward Podolsky, M.D. Octavo of 124 pages. New York, Bernard Ackerman, Inc., 1944. Cloth, \$2.00.

This little book is written primarily for lay consumption. In twenty-two chapters the author tries to present the nature of worry, its influence on the human body, and how to break the habit of worrying. It is one of the many popular books that is written in a more or less didactic manner, appealing to the intelligence of human beings and hoping to improve their health. It is hardly a book that will appeal to a physician.

IRVING J. SANDS

**Sternal Puncture. A Method of Clinical and Cytological Investigation.** By A. Piney, M.D., and J. L. Hamilton-Paterson, M.D. Second edition. Octavo of 69 pages, illustrated. New York, Grune & Stratton, 1943. Cloth, \$3.50.

The statement in the preface that a second edition of this book should be called for within two years proves that it fills a real need.

This monograph will appeal principally to the specialist, but any physician desiring authoritative information concerning the interpretation of sternal marrow smears will want to read it. Those expecting to find in this procedure the solution to all their hematologic problems will soon learn that the method has only a limited field of usefulness. With only few exceptions, as the authors point out, problems that cannot be solved by careful study of the peripheral blood will still remain unsolved after study of the bone marrow.

A. S. WIENER

**The Principles and Practice of Ophthalmic Surgery.** By Edmund B. Spaeth, M.D. Third edition, thoroughly revised. Octavo of 934 pages, illustrated. Philadelphia, Lea & Febiger, 1944. Cloth, \$11.

The third edition of this inclusive work on ophthalmic surgery contains one hundred more pages than the first edition. This addition represents an expanded treatment of many subjects, but chiefly

the physiology of squint and ptosis, as well as the addition of a number of illustrations.

Although the author disclaims the attempt to make the book encyclopedic, nevertheless, within its pages will be found a description of most of the surgical procedures for diseases of the eye and its adnexa which the ophthalmic surgeon is apt to require.

With its discussion of causation and the enumeration of anticipated complications and suggestions for handling them, aptly described, and with over 500 illustrations, many of them original, to illuminate and simplify the text, this work is of enormous value to all who undertake ophthalmic surgery, and the present edition contains added material of timely interest and importance in the expanded section on traumatic conditions.

E. CLIFFORD PLACE

**Applied Dietetics. The Planning and Teaching of Normal and Therapeutic Diets.** By Frances Stern. Second edition. Quarto of 265 pages. Baltimore, Williams & Wilkins Co., 1943. Cloth, \$4.00.

This book is unique and invaluable. The author recognizes the fact that it is one thing to prepare a diet list which—on paper—completely fills the patient's needs, and quite another to make certain that the necessary diet is understood by the patient and carried out by him. When reading this book one is constantly aware of the patient as a human being, rather than as the vague recipient of the prescribed diet.

Here will be found a list of factors other than food which influence diet: income and expenditure, nationality, education, food within and outside the home, sleep and rest, body cleanliness, occupation, and the daily regimen, etc. Concrete suggestions for teaching diet are given. The section on dietary outlines to meet special conditions lists not only the foods to be taken, but other important related facts, such as the physiology of each condition, its abnormal aspects, contributing factors, laboratory data, etc. This book is highly recommended.

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A group of prominent physicians recruited from American medical schools and hospitals will leave for Holland after that country's liberation, to give a series of four-week postgraduate refresher courses in Dutch universities, which will be found sadly disorganized by four years of Nazi occupation. This plan was announced by Dr. Herbert Loeb, of Cambridge, Massachusetts, former president of the Netherlands Dental Association at Amsterdam, who was instrumental in arranging for a similar postwar movement to bring dental care to the Netherlands. Of this latter movement, known by the name of "Ivory Cross Expedition," details were released by the Netherlands Information Bureau a few weeks ago.

Nine medical specialists will make the transatlantic voyage to give the refresher courses which

Amsterdam, where he specialized in neurology and psychiatry for the Dutch branch of the Rockefeller Foundation. He discussed his plan with Dr. Gerrit Bolkestein, Netherlands Minister of Education, when the latter toured a number of American universities last May. It found the general approval of the Minister, and details were subsequently worked out.

The Netherlands government will finance the traveling and other personal expenses of the American professors, who will, however, receive no extra or special compensation for their work in Holland. Because of German looting of Dutch medical school and hospital equipment, the physicians will take with them all material and instruments needed for

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surgery; Dr. Smith, bacteriology and infectious

Snapper, director of the Department of Graduate Medical Education at Mount Sinai Hospital, in New York City. He left the University of Amsterdam in 1937 to go to the Rockefeller Foundation at Peking, China. He was captured by the Japanese and later sent to America as an exchange prisoner.

Completing the roster are Dr. Van Slyke, of the Rockefeller Institute of New York City, for biochemistry, and Dr. Marshall, of Johns Hopkins University, for physiology and pharmacology.—  
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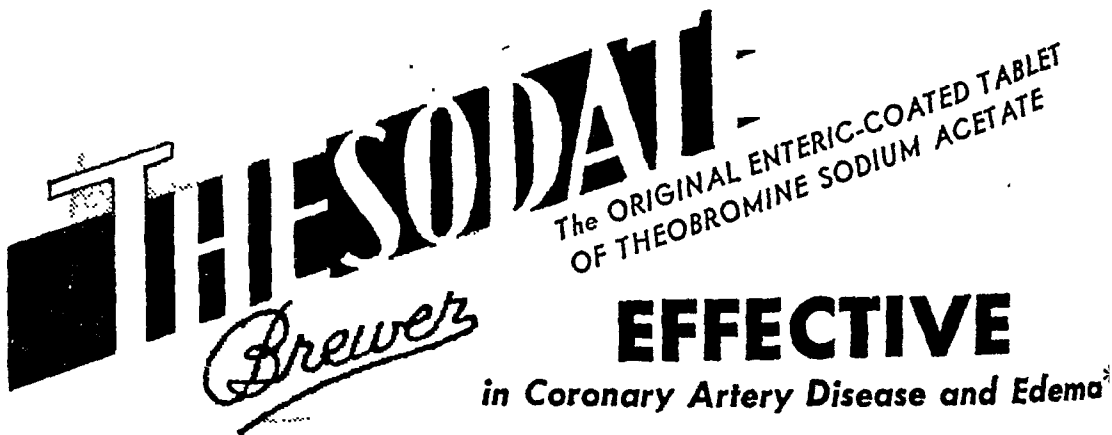
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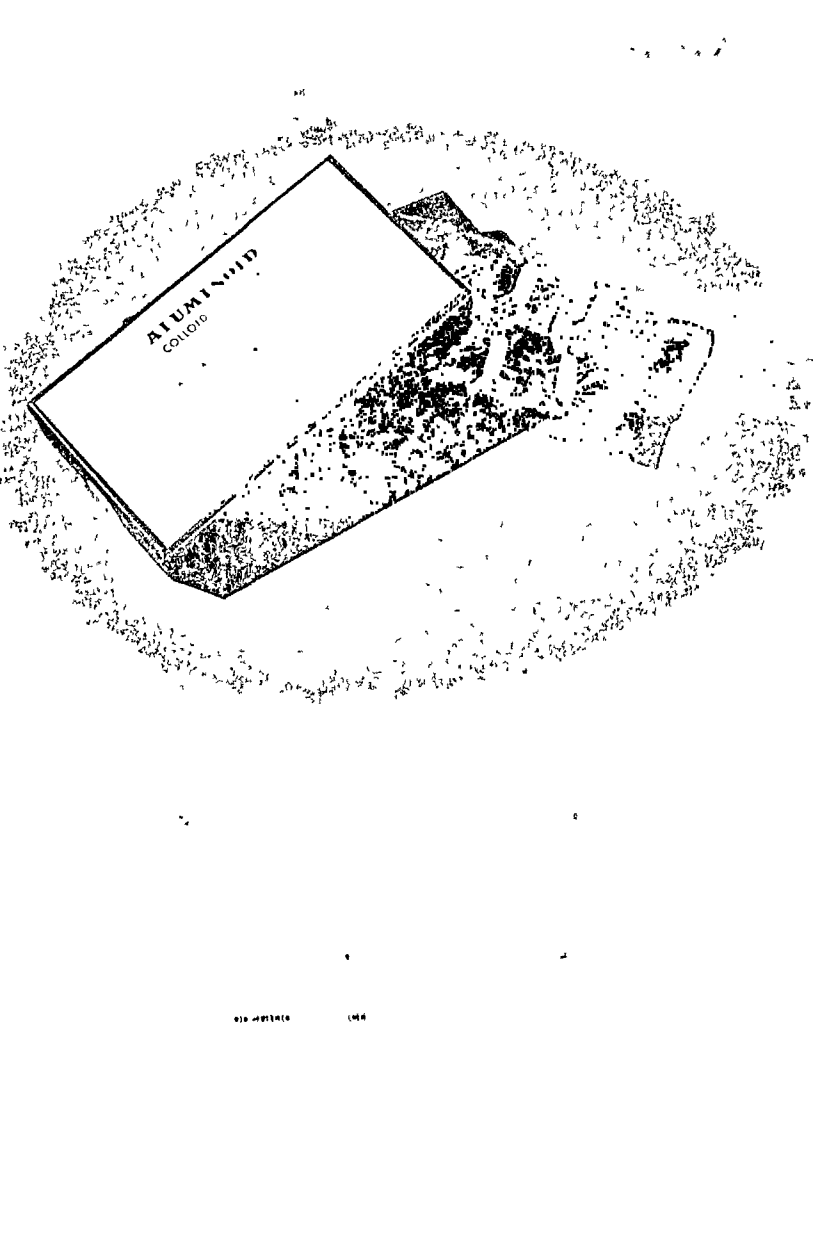
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1. Marriott, William McKim "Infant Nutrition," revised by Jeans, Mosby, St. Louis, 3rd Edition, 1911.
2. Jeans, Philip C: "The Feeding of Healthy Infants and Children," J. A. M. A., 120 913, 1942.

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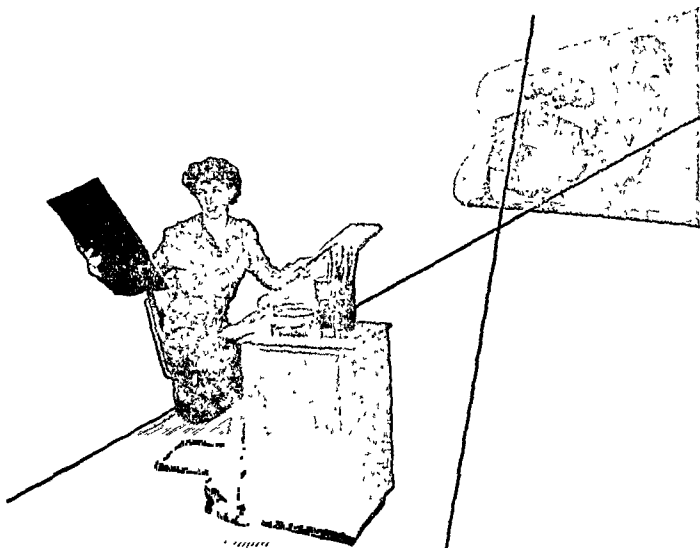
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\*Guttman, E. and Sargent, W — B. M. J., 1 1013, 1937

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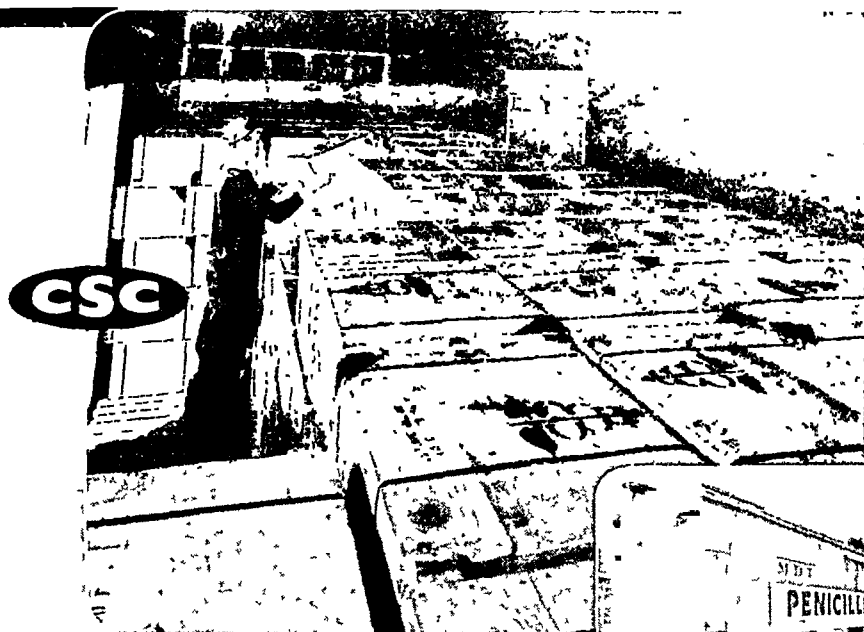


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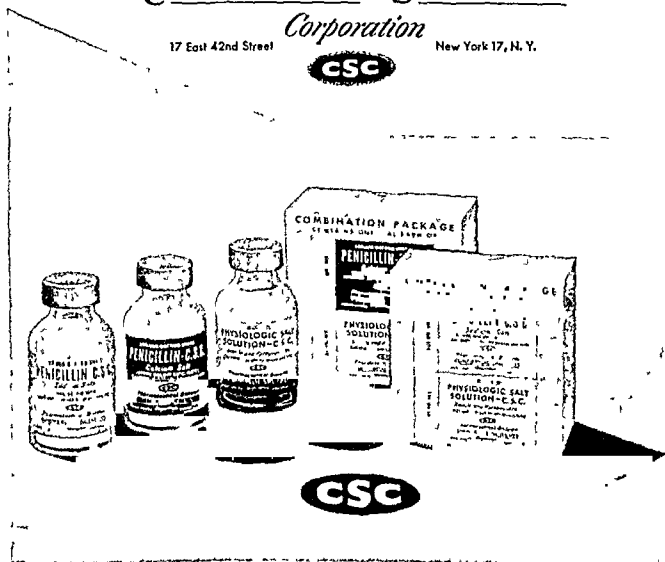
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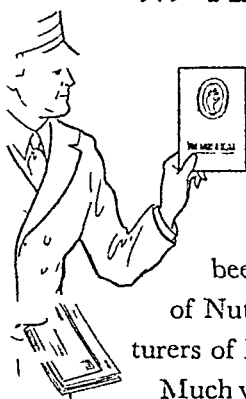
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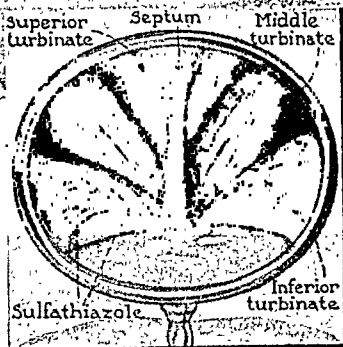
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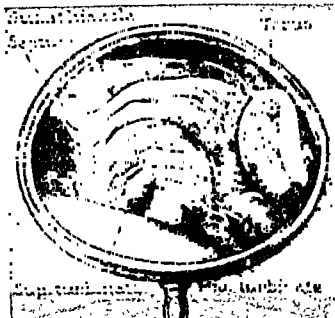


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PRODUCTS, INCORPORATED  
New Jersey

**desenex**  
**OINTMENT**

(with a vanishing-type base)  
ONE-OUNCE TUBES  
ONE-POUND JARS

**POWDER**

TWO-OUNCE SIFTER CARTONS

# IN IMPAIRED FAT DIGESTION

Degalol, the original chemically pure deoxycholic acid, is the constituent of human bile which is chiefly concerned with the emulsification of ingested fats.

When bile secretion is deficient, or totally lacking as in biliary fistula, the administration of Degalol assures not only digestion and

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Supplied in boxes of 100 1½ grain tablets.

Riedel - de Haen, Inc., New York 13, N. Y.

## Degalol

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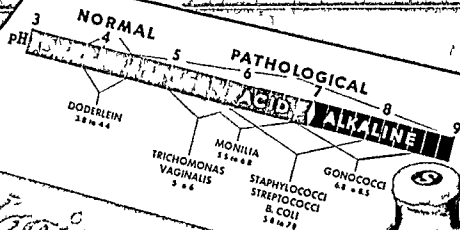
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# Restores Vaginal pH Destroys the Pathogenic Flora



## Vaginal pH Chart



In vaginal leukorrhea, Floraquin provides destruction of the pathogenic organisms and promotes rehabilitation of the vaginal mucous membrane. Containing the non-toxic protozoacide, Diodoquin, together with lactose and dextrose, this product of Searle Research removes the causative factors of leukorrhea and restores normal vaginal physiology.

Floraquin brings about the establishment and maintenance of an acidity (pH 4.0) unfavorable to vaginal infections. Its lactose and dextrose provide the necessary substrate for the production of lactic acid, a condition which enhances destruction of pathogenic organisms and promotes normal flora—Doderlein's Bacillus.

*For Office Insufflation*—Floraquin Powder in bottles of 1 oz. and 8 oz.

*For Home Routine*—Floraquin Tablets in boxes of 24.

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ETHICAL PHARMACEUTICALS SINCE 1899

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RESEARCH IN THE SERVICE OF MEDICINE

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**Zymenol**  
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*Equally Effective In:*  
**Constipation**  
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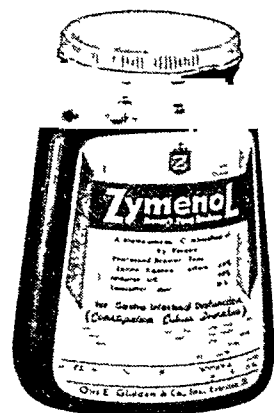
## A TANDEM ACTION in Gastro-Intestinal Dysfunction

**Zymenol** Assures normal intestinal content through  
brewers yeast enzymatic action.\*

Aids restoration of normal intestinal motility  
with complete natural vitamin B Complex.\*

This two fold natural therapy is equally effective in the irri-  
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bulkage, large doses of mineral oil or constipating astringents

*Economical teaspoon dosage avoids leakage*



# THROAT CHEMOTHERAPY WITHOUT SYSTEMIC TOXICITY

**T**HE unique value of this new, effective method for the local treatment of certain throat infections consists in this:

1. Chewing one tablet for as long as one hour provides a *high* salivary concentration (averaging 70 mg. per cent) of dissolved sulfathiazole...
2. that is *maintained* in immediate and prolonged contact with oropharyngeal areas which are not similarly reached by gargles or irrigations...
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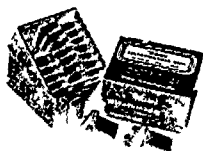
**INDICATIONS:** Acute tonsillitis and pharyngitis, septic sore throat, infectious gingivitis and stomatitis caused by sulfonamide-susceptible micro-organisms. Also indicated in Vincent's disease and in the prevention of local infection secondary to oral and pharyngeal surgery.

Supplied in boxes of 24 tablets, sanitized in slip-sleeve prescription boxes—on prescription only.

A PRODUCT OF WHITE LABORATORIES, INC., Pharmaceutical Manufacturers, Newark 7, N. J.

*White's*

**SULFATHIAZOLE GUM**



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PROTECTION\*

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EFFECTIVE THERAPY

IN

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Requires Analgesia

Bacteriostasis, and

Dehydration of the Tissues.

*Auralgan*

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THE DOHO CHEMICAL CORPORATION  
New York - Montreal - London

**"Flowers leave part of their fragrance  
in the hand that bestows them."**

*Ancient Chinese Proverb*



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IN, OR CODICIL TO, YOUR WILL:

"I give and bequeath to the Physicians' Home, Incorporated  
in the State of New York, June 4, 1919, the sum of. . . . .  
Dollars," to be used by the Board of Directors as it deems  
best to maintain and continue the purpose and activities of  
the Physicians' Home.

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The Iodine - wiped - off - with - alcohol technique in the preparation of the operative field kills bacteria rapidly and leaves the field dry, the skin clean.

Comparative tests demonstrate that Iodine is less affected by the presence of serum than many other similarly employed antiseptics.

**IODINE**

*Foe of Infection*

Iodine Educational Bureau, Inc.  
120 Broadway, New York 5, N. Y.



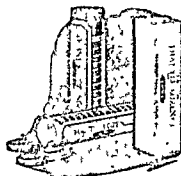
## Thantis Season

Winter time is the season of throat affections. Crowded transportation facilities, due to wartime conditions, cause exposure of more people to infection.

Many physicians have found Thantis Lozenges to be effective in relieving throat soreness and irritation, because they are antiseptic and anesthetic for the mucous membranes of the throat and mouth.

Thantis Lozenges contain Merodicein (H. W. & D. Brand of Diiodooxymercuriresorcinolsulfonphthalein-sodium), 1/8 grain, and Saligenin (Orthohydroxybenzylalcohol, H. W. & D.), 1 grain. They are effective and convenient; they dissolve slowly, permitting prolonged medication.

Thantis Lozenges are supplied in vials of twelve lozenges each.



**HYNSON, WESTCOTT  
& DUNNING, INC.**



Baltimore 1, Maryland

**My kid's  
the same age!**



• American children are far luckier. They not only get enough to eat normally but when additional vitamins are needed to aid recovery from childhood diseases and to speed convalescence, they can have vitamin-rich, nutritious **'AVIMAL'**.

**'AVIMAL'** is a palatably-flavored, diastatic malt extract fortified with essential vitamins. Also fine for expectant mothers to help lessen the complications of pregnancy.

Available in 8 ounce, 1 pint and  $\frac{1}{2}$  gallon bottles.

'Avimal'—registered trademark.

*Avimal*

a pleasantly flavored polyvitamin preparation

Each fluidounce of **'AVIMAL'** supplies: Vitamin A . . . 13,333 U. S. P. units; Vitamin D . . . 1,333 U. S. P. units; Vitamin B<sub>1</sub> . . . 5.5 Milligrams, Vitamin B<sub>2</sub> . . . 5.5 Milligrams; Nicotinamide . . . 40 Milligrams.



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## FOR THE GOOD OF MANKIND

**T**HE story of Penicillin is a shining example of international cooperation for the good of mankind.

From Fleming's observations in 1929, through the pioneer work of Florey's research team, to the large-scale production of Penicillin by the American Pharmaceutical Industry, the story is one of unprecedented teamwork which has extended far beyond national boundaries.

Such cordial cooperation between

individual British and American scientists, the Rockefeller Foundation, the National Research Council, the U. S. Department of Agriculture, the War Production Board, the American Pharmaceutical Industry, and the Medical Services of the British and American Armed Forces, has never before been equaled.

Cheplin Biological Laboratories, Inc. are proud to be a member of this international team.

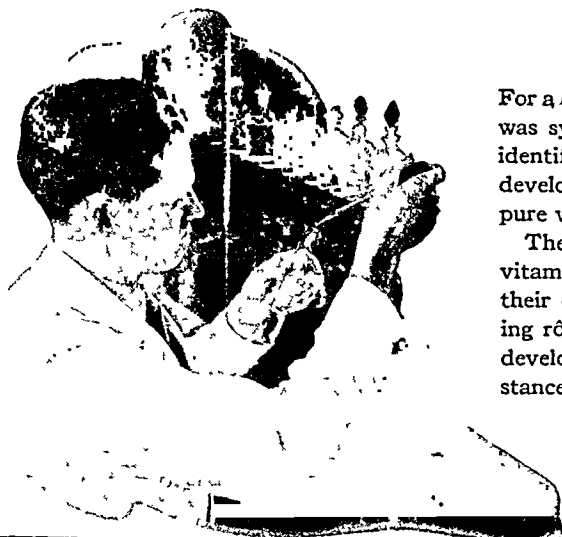


### CHEPLIN BIOLOGICAL LABORATORIES, INC.

(Unit of Bristol-Myers Company)

Syracuse, New York

# A decade of Vitamin Leadership



For a decade—since 1934, when Ascorbic Acid was synthesized—the name Merck has been identified with leadership in the synthesis, development, and large-scale production of pure vitamins.

The following list of contributions in the vitamin field made by Merck chemists and their collaborators emphasizes the outstanding rôle played by Merck & Co., Inc. in the development of these vitally important substances.

## 1934

Ascorbic Acid Merck (U.S.P.) was made available by Merck & Co., Inc.

## 1936

Vitamin B<sub>1</sub> was synthesized in the Merck Research Laboratories.

## 1937

Thiamine Hydrochloride Merck (U.S.P.) was made available in commercial quantities.

## 1938

Nicotinic Acid Merck (U.S.P.) (Niacin) and Nicotinamide Merck (U.S.P.) (Niacinamide) were made commercially available.

## 1938

Riboflavin Merck (U.S.P.) was the second pure crystalline vitamin to reach commercial production during that year.

## 1938

Alpha-Tocopherol (Vitamin E) was identified and synthesized by Merck chemists and their collaborators in other laboratories.

## 1939

Vitamin B<sub>6</sub> was synthesized in the Merck Research Laboratories.

## 1940

Vitamin B<sub>6</sub> Hydrochloride Merck (Pyridoxine Hydrochloride) became available in commercial quantities.

## 1940

Alpha-Tocopherol Merck (Vitamin E) was made commercially available.

## 1940

Vitamin K<sub>1</sub> Merck (2-Methyl-3-Phtyl-1,4-Naphthoquinone) was made commercially available.

## 1940

Menadione Merck (U.S.P.) (2-Methyl-1,4-Naphthoquinone), a pure chemical having marked Vitamin K activity, became available in commercial quantities.

## 1940

Pantothenic Acid, member of the Vitamin B-Complex, was identified and synthesized by Merck chemists and their collaborators in other laboratories.

## 1940

Calcium Pantothenate Dextro-rotatory, a biologically active form of Pantothenic Acid, was made commercially available by Merck & Co., Inc.

## 1943

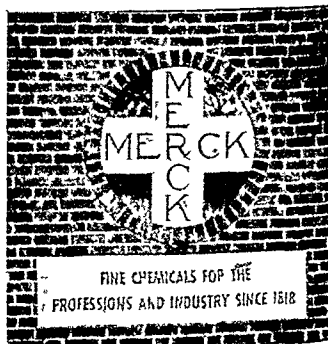
Biotin, member of the Vitamin B-Complex, was synthesized in the Merck Research Laboratories.

## 1944

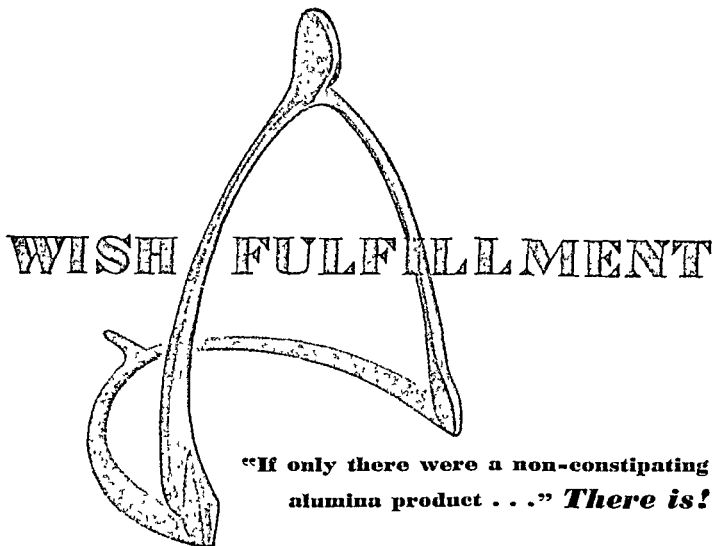
Biotin Merck was made commercially available by Merck & Co., Inc.

Merck & Co., Inc. now manufactures all the vitamins commercially available in pure form, with the exception of vitamins A and D.

*You are invited to write for literature*



**MERCK & CO., Inc.** *Manufacturing Chemists* **RAHWAY, N. J.**



'GELUSIL'\* Antacid Adsorbent is a wish fulfilled in peptic ulcer therapy. It contains an alumina gel which is non-reactive with gastric hydrochloric acid and does not break down, as do ordinary gels, into astringent, constipating aluminum chloride. 'GELUSIL' Antacid Adsorbent not only forms a colloidal shield protecting the inflamed peptic ulcer area, but effectively inactivates excess proteolytic pepsin. Through magnesium trisilicate, uniformly dispersed in its gel phase, 'GELUSIL' Antacid Adsorbent exerts a powerful and prolonged antacid-adsorbent antipeptic action.

Thus, within minutes, 'GELUSIL' Antacid Adsorbent provides relief which lasts for hours...Supplied in bottles of 6 and 12 fluidounces, and in boxes of 50 and 100 cellophane wrapped tablets. \*Trademark Reg. U. S. Pat. Off.

WILLIAM R. WARNER & CO., INC., 113 WEST 18TH ST., NEW YORK 11, N. Y.

**'GELUSIL'**  
antacid adsorbent





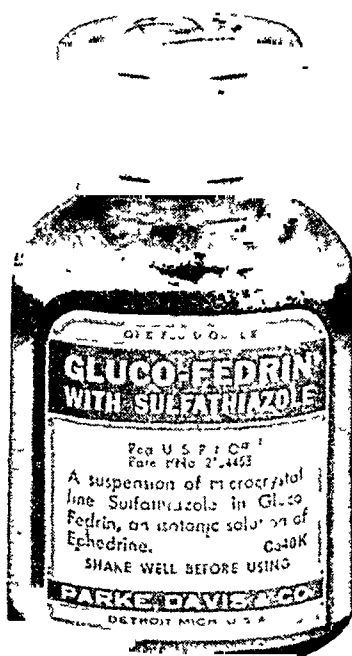
SULFATHIAZOLE in micro-crystalline form for maximum contact with infected areas.

EPHEDRINE for prompt, prolonged shrinkage of congested nasal mucous membranes.

ISOTONIC with nasal secretions.

pH ADJUSTED to the slightly acid range of normal nasal secretions.

AQUEOUS, soothing base, readily miscible with nasal secretions.



5

## OUTSTANDING FACTORS for EFFECTIVE NASAL RELIEF

Strikingly effective in the relief of the common cold and acute or chronic sinusitis, GLUCO-FEDRIN\* with SULFATHIAZOLE is in accord with modern medical thinking.

Various investigators have reported the value of the intranasal application of sulfathiazole in very finely divided form. Others have pointed out the advantage of the collateral use of ephedrine to increase nasal airway

occluded by congestion and to promote sinus drainage. The desirability of isotonicity, pH adjustment, and the use of an aqueous vehicle have been widely discussed and are quite generally accepted today.

These five factors are combined in the formula of GLUCO-FEDRIN with SULFATHIAZOLE. It is applied by spray, applicator, pack or dropper. Supplied in bottles of one ounce.

\*Trade Mark Reg. U. S. Pat. Off

### GLUCO-FEDRIN with SULFATHIAZOLE

*Parke, Davis & Company, Detroit 32, Michigan*

# IN B COMPLEX DEFICIENCY

The general need for vitamin supplementation is increasing. The average diet is often so close to the borderline of B complex sufficiency, that subclinical deficiencies always must be considered.

FORTIPLEX meets the need for speedy and complete satisfaction of the daily B complex requirement and for the replenishing of depleted stores, even under unfavorable conditions.

Not only because of its rational formula, but also because of its notably reasonable price, FORTIPLEX merits the preference it is being given by a constantly growing number of physicians.

Each tablet is standardized to contain not less than:

Thiamine Hydrochloride	..5.0 mg.
Riboflavin	.....5.0 mg.
Pyridoxine Hydrochloride	1.0 mg.
Calcium Pantothenate	..1.0 mg.
Niacinamide	.....20.0 mg.

Plus all the other factors supplied by the yeast and liver concentrate base.



**THE PAUL PLESSNER COMPANY**

35 YEARS OF ETHICAL SERVICE

DETROIT 2

MICHIGAN

# FORTIPLEX

# BELBARB

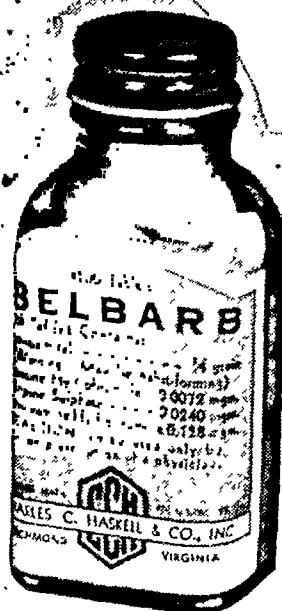
## AN

# Excellent

## SEDATIVE

and

## HYPNOTIC



The potentiation of the central action of phenobarbital by the belladonna alkaloids (Friedberg, Arch. f. exp. P. & P. CLX, 276) renders possible attainment of desired effects with relatively small doses, thus avoiding "hang over" and other unpleasant side-actions. In contrast to galenical preparations of belladonna, such as the tincture, Belbarb *has always the same proportion of the alkaloids.*

**Indications:** Neuroses, migraine, functional digestive and circulatory disturbances, vomiting of pregnancy, menopausal disturbances, hypertension, etc.

**Formula:** Each tablet contains  $\frac{1}{4}$  grain phenobarbital and the three chief alkaloids, equivalent approximately to 8 minims of tincture of belladonna.

**Belbarb No. 2** has the same alkaloidal content but  $\frac{1}{2}$  grain phenobarbital per tablet.

“Eliminate all food which can irritate the stomach mechanically or otherwise”\*



Bland, high quality food is vital in supplying the diet needs of the chronic ulcer patient.

#### **HORLICK'S**

*in the Ulcer Regimen —*

The bland character of Horlick's, its negligible curd tension and unusual ease and rapidity of digestion render it ideal in the dietetic management of these difficult cases.

#### *Forestall Hunger Pain*

Horlick's Tablets provide a valuable, concentrated, nutritious food, so packaged that they can be carried on the person for use at all times. The tablets may also be kept alongside the bed for nighttime use

*Convenient Forms.*

#### **HORLICK'S PLAIN**

{Powder and Tablets}

#### **HORLICK'S FORTIFIED**

{A, B<sub>1</sub>, D & G}

{Powder and Tablets}

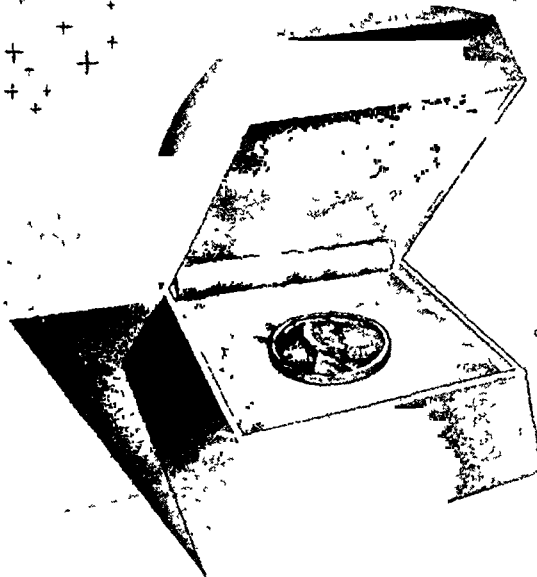
\* Cecil, R L    A Textbook of Medicine  
5th Edition, W B Saunders Co

**OBTAINABLE AT  
ALL DRUG STORES**

The *Complete* Malted Milk . . . Not Just a Flavoring for Milk

# HORLICK'S

# CHORIFYING THE AMERICAN PENNY



Navitol\* with Viosterol gives your patients convenient, effective protection against rickets at a weekly cost that is measured in pennies. Actually, the prophylactic dose of Navitol costs less today than when the war began.

## NAVITOL IS *Economical*...

Three drops each day, the average prophylactic dose, costs your patients only about 4c per week.

## NAVITOL IS *Potent*...

Three drops supply 1,000 U.S.P. Units of vitamin D and 5,000 Units of vitamin A.

## NAVITOL IS *Convenient*...

Three drops provide the average daily dose—easy for mother, easy for baby.

## NAVITOL IS *Palatable*...

Three drops daily of a bland, palatable oil, free from the unpleasant flavor of many A and D preparations, will be acceptable to both children and adults.

Navitol with Viosterol conforms to the maximum vitamin A and D potencies of the U.S.P. XII "Concentrated Oleovitamin A and D". Supplied in 50-cc. and 10-cc. bottles with dropper.

\* "Navitol" (Reg U S Pat Off.) is a trade mark of E. R. Squibb & Sons.

For vitamin A and D therapy that  
you can rely on, specify

# NAVITOL

# E·R·SQUIBB & SONS

Manufacturing Chemists to the Medical Profession Since 1858

*Indicated therapy in Sequelae of  
Epidemic Encephalitis*

**Pills Stramonium** (*Davies, Rose*)

2½ grains

Physicians in private practice as well as in neurological clinics have widely prescribed these pills since 1929, and their continued interest in and use of them points to the serviceability of this therapy.

Stramonium Pills (*Davies, Rose*) exhibit in each pill 2½ grains of alkaloidally standardized Stramonium (powdered dried leaf and flowering top of *Datura Stramonium*, U.S.P.), equivalent to 25 minims (1.54 cc.) of Tincture U.S.P.

As a reassurance of the activity of the finished pills, they, too, are alkaloidally assayed, thus establishing as far as possible uniformity and dependability.

*A package for clinical trial and literature mailed free of charge upon request.*

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**Davies, Rose & Company, Limited**  
Manufacturing Chemists, Boston 18, Massachusetts



## "That's What I Call Rapid Healing!"

**AFTER TEN DAYS** of Amphojel treatment (with, of course, an appropriate regime of diet and rest), x-ray re-examination often reveals complete disappearance of the peptic ulcer niche.\*

In addition to promoting rapid healing of the ulcer, Amphojel offers:

Prompt relief from pain... Fewer recurrences... Superior weight gain during treatment... Security against alkalosis. Available in 12 fluidounce bottles.

WYETH Incorporated, Philadelphia.

\*WOLDMAN, E. E., and POLAN, C. C.: The Value of Colloidal Aluminum Hydroxide in the Treatment of Peptic Ulcer; A Review of 407 Consecutive Cases, Am. J. M. Sc. 198: 155-164 (Aug.) 1939.



**AMPHOJEL**

*Wyeth*

REG. U. S. PAT. OFF.

**ALUMINA GEL**

# NEW YORK STATE JOURNAL OF MEDICINE

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VOLUME 44

DECEMBER 1, 1944

NUMBER 23

## Editorial

### What Can Be Done?

It is becoming apparent that the increasing load upon the shoulders of civilian medical practitioners is reaching a somewhat dangerous point. This year should mark the beginning of the really tough sledding for most physicians. No replacements for civilian doctors who become ill or die seem to be possible. Even in the event of a German defeat

ers will return to  
or more service  
of Germany.

"While it is not possible to obtain any official statement concerning plans for the release of military doctors, unofficial talks with War and Navy Department personnel clearly indicate that no important discharge of medical officers can be expected, in any branch of service, until after Japan has been defeated.

"The Army has never filled its original quota of one doctor for every 100 to 125 soldiers. Now, it is pointed out, the desired doctor-soldier ratio can be more nearly attained, and the care and rehabilitation of casualties facilitated, by retaining in service the 5,000 or more medical officers serving those troops scheduled for demobilization.

"Even if Army medical needs can thus be satisfied, discharge of physicians will still proceed slowly because of the difficulty of obtaining replacements.

In announcing its demobilization plan, the War Department said: 'Regardless of a man's priority, certain types of personnel can never become surplus as long as the war with Japan continues.' Doctors working in such fields as neurosurgery, plastic surgery, and psychiatry, for example, can probably expect to remain in service until the war in the Pacific has been won.

"Army medical men eventually discharged as surplus will, for some time to come, find their services much in demand by the Navy, which will not reach its peak strength until July. Naval needs can be only partly met by drawing on the 6,000-odd medical students in its V-12 program. A spokesman for the Bureau of Medicine and Surgery, emphasizing the Navy's need for doctors, said: 'The Navy would be glad to consider for commissioning any medical officer discharged by the Army.'"

In a communication to this JOURNAL, Lt. Col. Harold C. Lueth, MC, Army Service Forces, says

"Community medical care in the future will undoubtedly be impaired unless additional replacements are found for the losses of civilian practitioners. Any replacement scheme will, of course, depend upon the number and speed at which medical officers are discharged or released from active military duty. This problem, like the first one, has not

<sup>1</sup> Medical Economics, Oct., 1944.



been definitely decided and must await future developments."

In addition, the withdrawal of nurses for the armed forces is operating to require more of the doctor's time, to complete his hospital work. And the inability of the hospitals to care for many people is increasing the necessity for house calls, home care of illness, and putting a still further drain on physicians' energy and time.

Apparently, little relief can be anticipated in the near future, from any of the ordinary sources of replacement.

It seems timely, therefore, to consider what might be done, not by choice but of necessity, to meet the situation, to make the present physician population last a little longer and to extend its services to more people.

First, there is the matter of meetings. Committee work of the various societies is still far too heavy, and prolonged. It is shared by too few men. Night meetings cut into time for rest, which is becoming more and more a necessity. Something can be done about that.

If rest is a necessity, relaxation is even more imperative. It is something few physicians ever enjoy. If a physician is at

home, the telephone prevents it effectively; if he is away from home, then worry over the case that is not doing too well shatters it. There is no escape from the prison of responsibility, individual responsibility, responsibility that sends blood pressure up, and which drives inexorably. Can anything be done about that? We doubt it. Except that group practice in some measure provides a kind of relief by providing opportunity for more frequent consultation, and thus a sharing to some extent of responsibility. In some places night calls are handled through the local hospitals and thus a measure of relief is afforded by a better distribution of this particular responsibility. These matters are here brought up in the hope of directing the ingenuity of the profession to the possible expedients, which may avoid needless drains on definitely limited energy and time, without sacrifice of quality of services.

Many possible expedients have not yet been fully explored, probably because the necessity for them has seemed somewhat remote. But the time appears to be fast approaching when they must be considered locally, throughout the state, and nationally. It is better to begin too soon than too late.

## Appendicitis

In a letter to the JOURNAL, Dr. Donald B. Armstrong of the Metropolitan Life Insurance Company, says, in part:

"We are asking our Field Staff to place copies of our 'Appendicitis' leaflet in insured and other homes in their communities. We expect to reach approximately 600,000 families. This distribution will serve as a follow-up of an advertisement on appendicitis which the Company carried during June in such magazines as the following: *Saturday Evening Post*, *Collier's*, *Time*, *Newsweek*, *Ladies' Home Journal*, etc. These magazines have a combined circulation of more than 30,000,000. An appendicitis poster was recently displayed in a large number of plants and offices carrying group insurance. Additional copies of the poster will be displayed by agents at this time. . . ."

Many will doubtless have seen these clear, concise, advertisements and posters. Their message is simple: "Don't take a laxative, food, or medicine! Call your doctor immediately. Rest quietly."

The completeness and simplicity of these instructions, with their illustrative drawings, seem to us to be the way a public health campaign should be conducted.

In this regard, and by study of such campaigns as this, much valuable information could be gleaned as to possible ways to forward the plans for voluntary prepayment medical insurance.

The follow-up leaflet now being distributed is also worthy of comment. It describes what appendicitis is, when to suspect it, what to do and what to avoid, and what to remember. Under this last heading we find:

"A study of appendicitis made in a large Eastern city shows that:

When Appendicitis Patients

Took—

No laxative.....Only 1 in 62 died

One laxative.....1 in 19 died

More than one laxative.....1 in 9 died  
 When Appendicitis Patients Went to the Hos-  
 pital—  
 Within 24 hours.....Only 1 in 61 died  
 Within 48 hours.....1 in 24 died  
 Within 72 hours.....1 in 17 died  
 After 72 hours.....1 in 13 died"

Here, we submit, is something people can understand. It has undoubtedly already contributed much and will continue to contribute to the reduction in mortality from this cause.

Medicine would do well to study this material. Undoubtedly medical expense insurance would do much toward obtaining for many people early diagnosis, as hospital insurance has doubtless assisted many to

obtain, early operation when necessary. Therefore, medicine's sponsorship of medical care insurance would make more effective any campaign of this sort.

We are handicapped in our title. Appendicitis is short and simple, easily understood, arresting. "Voluntary medical expense indemnity insurance" is not. It seems that a short, arresting name for this kind of insurance would be a productive first step to capture public and professional interest.

We would then be in a position to follow up such forward-looking public health work as is illustrated by the life insurance companies' posters, advertisements, and leaflets.

*Verb. sap. Finis.*

## Horace Wells Centenary in Hartford, December 11

The Horace Wells Centenary, which has been marked throughout the nation by dental societies during the present year, will be brought to a close December 11 with an elaborate program at Hartford, Connecticut, in which dental, medical, and civic groups will participate. The program is under the direction of the Horace Wells Centenary Committee, of which Eugene M. Clifford, Hartford, is chairman.

Because of wartime transportation difficulties it has not been possible to schedule a national meeting to mark the centennial as originally planned, but the Committee urges all dental schools, component and constituent societies to mark the anniversary locally December 11 with appropriate ceremonies.

At the recent meeting of the American Dental Association in Chicago, Tuesday, October 17,

was officially designated as "Horace Wells Day" and a ceremonial was held preceding the third meeting of the House of Delegates.

During the past year several resolutions have been passed to commemorate the centennial. The Connecticut State Legislature in a special session January 28, 1944, passed a resolution on Horace Wells. The American Medical Association, at its recent annual meeting, approved a resolution which "commends and endorses the celebration during 1944 of the centenary of this application of nitrous oxide anesthesia by Dr. Horace Wells of Hartford, Connecticut." The Anesthesiology Section of the American Medical Association also passed a similar resolution. A joint resolution memorializing the name of Horace Wells was recently passed by the U.S. Senate.

## Correspondence

November 2, 1944

To the Editor:

r 15, 1944,

r. Harrison

"Thorough study of the therapy of this condition. I devoted seventeen years to this work. During these years of study and research I read almost every article on bursitis, beginning with the days of Codman, and I am still

interested in every article on this subject. Naturally I read the paper of Dr. McLaughlin most carefully, and I wish to say a few words about it.

The article is wonderfully written. The pathology is pictured so vividly that no Rembrandt could have done better. Reading it you imagine that you are with Dr. McLaughlin at the surgical table, where you actually see him using his scalpel with the utmost skill, displaying before you details in anatomy and pathology. In this manner my illusions carried me throughout the article, until

I came to the paragraph on "Therapy." Here I, somehow, became disillusioned, because of the kind of treatment it advocates.

Says the paragraph: "There are only two forms of therapy . . . having proved curative effects—opening the deposits by knife or needle." I wish to suggest that both these methods be discarded as often as possible. The former is at times risky, and the latter is very torturous. Indeed, physicians and lay patients alike who were treated by needling unsuccessfully or with aggravation of their bursitis and then came to me for treatment have complained most bitterly of that torture. Besides, the results are meager. Dr. McLaughlin himself states that permanent relief was obtained "in less than 25 per cent of all such cases"; Dr. Bosworth, who had great experience in the therapy of bursitis, says that needling is less certain than the scalpel. With reference to the latter, I wish to state that I know of cases that suffered pain in the shoulder for many years after the operation, and I have seen shoulders operated upon in the best hospitals resulting in the loss of function forever. It is because of such mishaps that the noble and humane surgeon, Dr. Codman, voiced his protest against surgery in calcified bursitis.

Today physical medicine offers a definite, safe, and painless method for the cure of this malady in over 95 per cent of the cases. Of course, the physical therapy which I have in mind is not baking and massage or short-wave diathermy. We have studied so thoroughly the behavior of the various

apparatus we have employed in our research that we know exactly their effect on symptoms and pathology. This is probably the reason for our success.

In 1936, the April 1 issue, a preliminary report of my researches in bursitis at the Mount Sinai Hospital Physical Therapy Clinic appeared in the *NEW YORK STATE JOURNAL OF MEDICINE*. I then received letters of interest and request for reprints, from almost every English-speaking corner of the earth, even from South Africa. I was surprised to see that the *JOURNAL* reached so far and was so widely read. When Lord Horder and his staff came from England to see the American doctors at work they had me, too, on their list.

All the years after the preliminary report was published I kept on improving on the methods, and in November, 1943, I published a final report in the *Medical Record* under the following title: "The Nonsurgical Treatment of Calcified Bursitis—A Definite, Safe, and Painless Method." This time, too, I received letters from practically every state in the Union, and many editors have reviewed the article in their journals—e.g., *Archives of Surgery*; *Quarterly Review of Medicine*; *Mount Sinai Hospital Journal*, etc. Thus I feel confident that American physical medicine can offer a definite, safe, and painless cure for "calcified bursitis."

JOSEPH ECHTMAN, M.D.

1175 Park Avenue  
New York City

## 1945 ANNUAL MEETING

Medical Society of the State of New York

*The 139th Annual Meeting of the Medical Society of the State of New York will be held Monday, April 30, to Thursday, May 3, 1945, inclusive, at the Hotel Statler in Buffalo.*

COUNCIL COMMITTEE ON CONVENTION

# *Symposium: Intensive Treatment of Syphilis*

## RAPID PLAN FOR TREATMENT OF EARLY SYPHILIS FOR OFFICE PRACTICE

A. BENSON CANNON, M.D., JEROME K. FISHER, M.D., and LOUIS WEXLER, M.D.,  
New York City

IT IS the general practitioner who has in the past treated the majority of the cases of syphilis, and he will in all likelihood continue to do so in the years to come. Therefore, any scheme of treatment must of necessity be devised primarily for his use, leaving to the syphilologists the more complicated and specialized procedures that are necessary for handling the more difficult therapeutic problems which may arise in the management of cases of syphilis.

In order to fit the general practitioner into the intensive-treatment program of syphilis we have undertaken to present, with the prospect of a high percentage of cures, a plan of treatment for the patient with early syphilis that can be accomplished from within a few weeks to several months and yet be relatively safe and inexpensive.

As a result of our study in intensive treatment on 332 patients with early syphilis at Presbyterian Hospital in New York City (using a minimum of 3.0 Gm. of arsphenamine by the syringe method four times daily for six days) we are convinced of the need for a more practical, a simpler, safer, and cheaper treatment that will meet the needs of the ambulatory patient with syphilis. The knowledge gained by this experimental study combined with the experience of other observers using various plans of therapy has served as a basis for our study of an intensive treatment suitable for office patients with early syphilis.

### Résumé

At this time it might be well for us to review the work of others in their attempts at a rapid cure of early syphilis.

Massive dosage in the treatment of syphilis, as we all know, is no new thing. It has long been an accepted fact among most syphilologists that the more arsenic one was able to give in early syphilis without producing damage, the better were the prospects of cure. Ehrlich himself promulgated the theory of the single sterilizing dose as the desired goal in the treatment of syphilis, and there was much experimentation with various time-dose schedules and different

routes of administration by his contemporaries and followers.

Scholtz,<sup>1</sup> a contemporary and collaborator of Ehrlich, is believed to have been the first to have tried to treat syphilis in human beings with massive doses of arsphenamine injected intravenously. He gave a total of 0.9 Gm. to 1 Gm. in at least three or sometimes four injections on two successive days (0.3 Gm. at 9:00 A.M. and 0.2 Gm. at noon the first day; the second day 0.2 or 0.25 Gm. at 9:00 A.M. and 0.15 or 0.2 Gm. at noon). He reported good clinical and serologic results. After a two-and-one-half-year trial, he found that most of his patients were entirely free from clinical symptoms, and that the blood Wassermann had remained negative since a short time after completion of treatment.

Pollitzer<sup>2</sup> (1916) also favored massive divided doses of an arsenical in the treatment of early syphilis. He gave three daily injections of arsphenamine, 0.5, 0.5, and 0.4 Gm. respectively, followed by four to six weekly injections of mercury salicylate.

In 1921 Lueth<sup>3</sup> advocated the giving of a total of 2.55 Gm. of neoarsphenamine in four days. On the first day he gave 0.3 Gm. of neoarsphenamine and an injection of mercury on the second and third days, 0.45 Gm. of neoarsphenamine plus mercury both morning and evening. On the morning of the fourth day he gave the sixth dose of 0.45 Gm. neoarsphenamine plus mercury. The patients were discharged on the fourth day, showing much clinical improvement and with the cures far advanced.

Schreus (1926)<sup>4</sup> tried giving neoarsphenamine in doses of 0.3 Gm. followed by 0.15 Gm. at fifteen-minute intervals until a total of 0.75 Gm. had been administered, or an initial dose of 0.45 Gm. followed by 0.3 Gm. at twenty- to twenty-five-minute intervals until a total of 0.9 Gm. had been given. In 1927, he reported with Burmeister<sup>5</sup> that he had treated a total of 48 patients by this method, that the drug had been tolerated just as well as the usual arsphenamine and bismuth or mercury injections, and that the results compared favorably with those under the aforementioned treatment. Late observation showed negative Wassermanns and no evidence of syphilis in 68.2 per cent of the cases.

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 11, 1944. Part of a symposium on "Intensive Treatment of Early Syphilis."



was receiving bismuth alone, ten days elapsed between two treatments

We feel, on the basis of the excellent initial results obtained by the Army treatment and the paucity of serious reactions caused by this treatment, that the Army will be encouraged to shorten appreciably its plan of treatment, and make it more intensive by closer spacing of injections and by the giving of more bismuth. From our present knowledge, it appears to us to be the safest, most effective, and most intelligent plan yet devised for ambulatory cases

### City Hospital Plan

Since 1924, the plan of treatment on our service at the City Hospital has been a gradually increasing intensive one. Stimulated by our observations of the results obtained by Professor Kyle, of Vienna, with 800 cases of early syphilis, with a course of eight injections of neoarsphenamine, followed by approximately eight pyrexysms of malaria, we instituted a somewhat analogous plan of treatment for the City Hospital cases of early syphilis (Table 2). Dr. Kyle had claimed cures in a great majority of cases so treated within a year. We used arsphenamine two or three times a week for eight to ten injections, followed by malaria. This plan was continued until about three years ago when, because of lack of hospital space and personnel, we had to discontinue the malaria.

The treatment was devised to meet the requirements of the type of City Hospital patients, which in our case have been mostly prostitutes and of an indigent class.

Most of the women have been prostitutes picked up by the police and found to have early syphilis by the examining physician and sent to the hospital by the court. They have been mostly young women between the ages of 15 and 39, averaging about 22 years, a great majority of them suffer from extensive secondary manifestations of the disease, many with widespread condylomas and ulcerating secondary lesions of every description. On admission each patient had a strongly positive blood Wassermann and all spinal fluids were negative. Many patients fully admitted promiscuous sexual exposures for months with open lesions.

Because of the impossibility of keeping these patients in the institution for more than a few weeks and because of our inability to follow them after discharge from the ward, we felt it imperative, not only for the health of the patient, but also for public health purposes, to give them the greatest amount of antisymphilitic treatment possible in their short hospitalization period.

Based on the results obtained in our experimental work at the Presbyterian Hospital in an

TABLE 2—HOSPITAL MAPHARSEN SCHEDULE

50-65 Kg of Body Weight (55 Kg Average)				110-143 Lbs (121 Lbs)			
Day	Dose			Day	Dose		
1	120 mg	$\times 2$	240 mg	7	60 mg		
2	120 mg			8	60 mg		
3	120 mg			9	60 mg		
4	120 mg			10	60 mg		
5	120 mg			11	60 mg		
6	120 mg			12	60 mg		
Total				120 Gm			
65-80 Kg of Body Weight (70 Kg Average)				143-175 Lbs (154 Lbs)			
1	120 mg	$\times 2$	240 mg	7	60 mg		
2	120 mg	$\times 2$	240 mg	8	60 mg		
3	120 mg			9	60 mg		
4	120 mg			10	60 mg		
5	120 mg			11	60 mg		
6	120 mg			12	60 mg		
Total				132 Gm			
80-100 Kg of Body Weight (85 Kg Average)				175-220 Lbs (187 Lbs)			
1	120 mg	$\times 2$	240 mg	7	120 mg		
2	120 mg	$\times 2$	240 mg	8	120 mg		
3	120 mg			9	120 mg		
4	120 mg			10	120 mg		
5	120 mg			11	120 mg		
6	120 mg			12	120 mg		
Total				168 Gm			

1 cc of 10 per cent suspension of bismuth subacetylate in oil intramuscularly twice weekly for two weeks while in hospital. Sent to clinic for twenty-five weekly 2 cc injections of bismuth after discharge from hospital.

effort to simplify the technic and to shorten the patient's hospitalization, we devised a twelve-day intensive treatment. Our plan consisted of giving large doses of mapharsen and bismuth. All patients received two injections of mapharsen the first day consisting of 120 mg each. The patients of the middle-weight (135-165 pounds) and heavy-weight (165-220 pounds) groups received two mapharsen injections the second day also, and the heavy-weights continued with 120 mg daily for the remainder of the twelve days, whereas the middle-weight and light-weight group had 120 mg daily for the remainder of the first week and 60 mg daily for the second week. The total dosages were 12 Gm for the light-weight group, 132 Gm for the middle-weight group, and 168 Gm for the heavy-weight group. In addition, each patient received 100 mg of bismuth subacetylate intramuscularly twice a week.

At completion of treatment, each patient was referred to the City Hospital Clinic for twenty-five weekly injections of bismuth, the idea being not only to try to prevent infectious relapse, but also to observe the patient. All patients had general physical examinations, dark-field examination, blood Wassermann reaction, blood count, and urinalysis before treatment was begun. Frequently blood Wassermann tests besides clinical observations were made at each visit to the clinic. In all instances, the surface lesions have healed promptly under treatment, and at the time of discharge from the hospital, about two

TABLE 3.—CLINIC ARSPHENAMINE SCHEDULE

100-135 Lbs.			
Men		Women	
First day.....	0.5 Gm.....	0.4 Gm.	
2 days.....	0.4 Gm. each day....	0.35 Gm. each day	
2 days.....	0.35 Gm. each day....	0.3 Gm. each day	
No treatment Saturday and Sunday			
5 days.....	0.3 Gm. each day....	0.25 Gm. each day	
No treatment Saturday and Sunday			
5 days.....	0.2 Gm. each day....	0.2 Gm. each day	
No treatment Saturday and Sunday			
5 days.....	0.2 Gm. each day....	0.2 Gm. each day	
Total: 20 days...	5.5 Gm.....	4.95 Gm.	
135-165 Lbs.			
2 days.....	0.5 Gm. each day....	0.4 Gm. each day	
3 days.....	0.4 Gm. each day....	0.35 Gm. each day	
No treatment Saturday and Sunday			
5 days.....	0.3 Gm. each day....	0.3 Gm. each day	
No treatment Saturday and Sunday			
5 days.....	0.25 Gm. each day....	0.25 Gm. each day	
No treatment Saturday and Sunday			
5 days.....	0.2 Gm. each day....	0.2 Gm. each day	
Total: 20 days...	5.95 Gm.....	5.60 Gm.	
165 Lbs. and Over			
2 days.....	0.5 Gm. each day		
3 days.....	0.4 Gm. each day		
No treatment Saturday and Sunday			
5 days.....	0.4 Gm. each day		
No treatment Saturday and Sunday			
5 days.....	0.3 Gm. each day		
No treatment Saturday and Sunday			
5 days.....	0.3 Gm. each day		
Total: 20 days...	7.20 Gm.		

TABLE 4.—CLINIC MAPHARSEN SCHEDULE

Day	Dose
1	120 mg.
2	120 mg.
3	120 mg.
4	120 mg.
5	120 mg.
No treatment Saturday and Sunday	
1	120 mg.
2	120 mg.
3	120 mg.
4	120 mg.
5	120 mg.
Total: 1.20 Gm.	

weeks after admission, all lesions were healed, sometimes before and often within a week.

The injections have been given by the interns or by a nurse. To date we have treated about 71 patients, under the supervision of the resident dermatologist, Dr. Wexler, of whom there were 58 women and 13 men, the approximate distribution into weight groups being light-weight, 57; middle-weight, 13; heavy-weight, 1. Of these 71 patients 40 per cent are continuing treatment with bismuth at the clinic. In none of these has any reaction appeared which did not ultimately clear. Practically every patient is nauseated on the first day of treatment and vomits about four hours after the first injection. The following day most of the patients feel quite well and comfortable and finish their treatment without any discomfort or nausea. We have had four cases of toxic erythema, each clearing in a few days after cessation of treatment. They have been able to resume and complete the treatment without further trouble. There was one case of phlebitis of the injected vein. Ringing in the ears, accompanied by nausea and vomiting, was noted in one patient after the seventh injection.

This state lasted only about four hours, but returned after the eighth injection the following day and persisted for four days. No further treatment was given. The only serious reaction occurred in a patient who had a convulsion and was irrational after the ninth injection. This

was followed by complete recovery in twelve hours. The patient was discharged the following day as normal.

To any physician who has a patient who can be hospitalized we would recommend this form of treatment as a simple one that so far has been unattended by serious accidents and that affords the accepted amount of mapharsen for probable spirochetal sterilization. The added bismuth with its slow absorption would minimize the danger of infectious relapse; and, should the physician be successful enough to continue the bismuth injections for twenty-five weeks longer after hospitalization, it would give him the advantage of frequent observation.

### Clinic Plan

To meet the requirements of the ambulatory patient we have been working on the plan of daily injections of arspenamine for one group, and of mapharsen for another. We tried to have these groups as nearly similar as possible in order to have a more informative comparison of our results.

Approximately a year ago, we began giving daily injections in Vanderbilt Clinic, using arspenamine by syringe method, administering the largest doses at the beginning of the treatment and diminishing to smaller doses toward the end of the course. Because the Clinic is closed Saturdays and Sundays, we have given the injections only five days a week, requiring a month for the completion of the course of twenty injections (Table 3).

We have treated also three cases in our private office, giving seventeen consecutive treatments. These patients were working every day, and none of the three had any reaction of any sort; one of the patients was a ballet dancer and worked every day and every night.

Each of these three patients received approximately 5.2 Gm. of arspenamine each and each was seronegative by the end of three months after termination of the treatment. One

TABLE 5—OFFICE MAPHARSEN BISMUTH SCHEDULE A—INTENSIVE PLAN

Weeks	Mapharsen 6 Days a Week (Sundays Omitted)	Bismuth Salicylate in Oil (10%)
1	120 mg $\times$ 6 = 720 mg	1 cc twice weekly
2	60 mg $\times$ 6 = 360 mg	1 cc twice weekly
3		2 cc once weekly
4		2 cc once weekly
5		2 cc once weekly
6		2 cc once weekly
7	120 mg $\times$ 6 = 720 mg	1 cc twice weekly
8	60 mg $\times$ 6 = 360 mg	1 cc twice weekly
9		2 cc once weekly
10		2 cc once weekly
11		2 cc once weekly
12		2 cc once weekly
Total	2 16 Gm	24 cc (2 4 Gm)

For the next four to five months give one 2 cc bismuth injection weekly

has remained negative as to blood and spinal fluid for approximately a year. The other two have remained clear for six and nine months, respectively.

Of 29 patients treated at Vanderbilt Clinic, ranging in age from 17 to 42, 18 were women. The dosage was gaged according to the weight to the patient, the minimum total dosage was 5 5 Gm for men and 4 95 Gm for women.

The reactions were exceedingly mild, rarely interfering with treatment. Three complained of mild pains in the legs, two complained of a generalized erythema that lasted three days. Treatment was resumed and both completed courses, but one patient had mild nitritoid reactions.

All spinal fluids were negative at beginning of treatment. Two had seronegative primary syphilis, four had seropositive primary syphilis, and the remainder had secondary.

All but seven patients finished their treatments. In this group we have had three relapses and eleven have become completely negative. We have one seropositive primary patient who received only four daily injections, totaling 1 6 Gm.

He failed to appear for observation for eight months. On his return to the Clinic, his blood and spinal fluid were negative by all methods and have remained so for a year.

We are now engaged in studying the effects of daily injections of mapharsen in the treatment of ambulatory patients with early syphilis. All patients are receiving 120 mg daily for ten injections, and to comply with Clinic regulations (no clinic Saturdays and Sundays) we have given the treatment only five days weekly (Table 4). To date we have treated 15 patients, and at least half of these have had nausea and vomiting.

After long and varied experience in the treatment of early syphilis, we are convinced that no

TABLE 6—OFFICE MAPHARSEN BISMUTH SCHEDULE B—SEMI-INTENSIVE PLAN

Weeks	Mapharsen 3 Times a Week (Alternate Days)	Bismuth Salicylate in Oil (10%)
1	120 mg $\times$ 3 = 360 mg	1 cc twice weekly
2	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
3	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
4	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
5		2 cc once weekly
6		2 cc once weekly
7		2 cc once weekly
8		2 cc once weekly
9	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
10	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
11	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
12	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
13		2 cc once weekly
14		2 cc once weekly
15		2 cc once weekly
16		2 cc once weekly
17	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
18	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
19	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
20	60 mg $\times$ 3 = 180 mg	1 cc twice weekly
Total	2 34 Gm	40 cc (4 0 Gm)

one plan can be devised that will meet the requirements of each individual case. Practically every one of the various treatment schedules that have been advocated has its own beneficial merit. The five-day plan might be the method of choice for the patient who can be under treatment for only a few days (seafaring men, for example). For still another type of patient who can be hospitalized for a bit longer, a somewhat simpler, less intensive, and perhaps a safer plan can be used, as outlined in that used at the City Hospital at the present time, one including not only mapharsen, but also bismuth. This latter plan of treatment particularly appeals to us, not only because of its simplicity and the comparative freedom from injurious effects, but also because the slow absorption of the bismuth gives hope of decreasing infectious relapses. In addition, this plan allows us to keep the patient under observation for a much longer period.

Again, there is that large group comprising the majority of patients with early syphilis that is treated in office and clinical practice, which must be brought into the scheme of rapid treatment (Table 5). It is for this class of patient that we are especially interested in outlining a plan that will afford quick spirochetal sterilization, and if possible, a lasting cure with the minimum of reactions.

In the cure of syphilis we are convinced that no plan of treatment with arsenic alone so far devised is as effective as a combination of arsenic with heavy metal, or arsenic with fever. Moreover, the added heavy metal or fever is the best insurance that the patient with early syphilis can have against relapse of his infection.

With the above idea in view, we venture to suggest the following scheme.



Our study of intensive arsenotherapy on the ward at Presbyterian Hospital convinced us of the advantage of beginning with large doses of the arsenical and gradually diminishing the dose toward the end of the course, this form of treatment proving much more effective than beginning with small doses. It is true that this large initial dose on the first day of treatment will increase appreciably the reactions on that day, but such reactions are usually not of a serious nature in a patient with early syphilis and the patient is usually symptom-free the following day.

There is no question in our minds that the more intensive the treatment during the first few days without any serious effects on the patient, the greater are our chances of effecting a cure.

Also, our experience teaches us the necessity of giving a heavy metal both in conjunction with the arsphenamine and after completion of the arsenical treatment. This more slowly absorbed and retained drug not only increases our chances of getting a satisfactory result and practically obviating mucocutaneous relapses, but, by continuing the treatment of bismuth for a number of weeks after the completion of the arsenical, we are enabled to keep the patient under observation.

Should the patient disappear from treatment after even the first course of the arsenical, we still believe he has quick spirochetal sterilization and a better than 50 per cent chance of being cured.

Obviously, this strenuous form of treatment cannot be given to all patients because of physical infirmities, age, occupation, social reasons, or because of intolerance. In these cases we would advocate a less intensive program of therapy (Table 6).

You will notice that this plan of treatment gives almost as much mapharsen (2.34 Gm.) as, and more bismuth subsalicylate (4.0 Gm.) in twenty weeks than the Army plan of treatment of 2.4 Gm. of mapharsen and 3.2 Gm. of bismuth subsalicylate in twenty-six weeks, a saving of six weeks. However, we advocate a continuation of the bismuth at weekly intervals for twelve to fifteen weeks longer.

Should your patient not be able to fit into any of the above plans, you still have the excellent treatment schedule of the Army that you may use (Table 1). This standard Army plan, as you probably know, covers a period of twenty-six weeks, and consists of a total of forty injections of 60 mg. doses of mapharsen and sixteen injections of 0.2 Gm. of bismuth subsalicylate. Mapharsen is given twice a week for the first

ten weeks. One injection of 0.2 Gm. of bismuth subsalicylate is given weekly for the first five weeks. After ten weeks of mapharsen, the patient is given five weekly injections of bismuth, 0.2 Gm. each. He is then given mapharsen twice a week for the next ten weeks, and during the last six weeks of mapharsen, he is given weekly injections of bismuth subsalicylate.

In all cases we make a thorough physical and neurologic examination, darkfield examination, a blood Wassermann, and one or more blood precipitation tests and a spinal fluid examination. We recommend that a blood Wassermann should be taken at least once a month while the patient is receiving treatment, and every two or three months afterwards during the first year and every four to six months afterwards. We repeat the spinal fluid test at the end of one year from the time of his first starting treatment.

It is obvious that no definite statement can be made at this time on the ultimate outcome of any intensively treated cases, because of the short duration of observation. Perhaps many years should elapse before one can make a final appraisal of any intensive arsenotherapy.

## Summary

A short review of intensive treatment of early syphilis with the arsenicals by previous investigators is here outlined.

The twelve-day mapharsen-bismuth treatment plan as employed at City Hospital is described.

A daily plan of arsphenamine or mapharsen treatment as used at the Vanderbilt Clinic is presented.

Two plans, one intensive and the other semi-intensive, are especially devised for use by the general practitioner in the treatment of primary and secondary syphilis in office practice.

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# INTENSIVE TREATMENT OF EARLY SYPHILIS—METHOD OF EAGLE AND HOGAN

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**T**HE Eagle and Hogan method of treating syphilis consists of triweekly injections of mapharsen, given for a total of six, eight, or ten weeks (dosage approximately 1 mg per kilogram of body weight). Bismuth may be given concurrently once a week. This method was introduced by Eagle and Hogan after a large-scale experimental study on rabbits<sup>1,2,3</sup>. In July, 1942, they had already accumulated data on approximately 500 treated patients<sup>4</sup>. On the basis of their experimental data and clinical study, they came to the conclusion that the above-mentioned method "is a safe procedure and that it will apparently give therapeutic results comparable to those obtained by average clinic practice."

We began to use this method in September, 1942, at the suggestion of Dr. Eagle<sup>4</sup>. To date 61 patients have been treated, of whom 4 were women and 57 men. The maximum age was 49, the minimum 16. Twenty-two patients were in the age group from 16 to 20 years, 27 were from 21 to 30 years, 10 were from 31 to 40 years, and 2 patients were 46 and 49, respectively.

There were 9 patients with seronegative primary syphilis, 33 with seropositive primary, 18 with secondary syphilis, and one with latent syphilis. There were 54 cases from the Metropolitan Hospital and Dispensary (service of Dr. Van Alstyne Cornell), 7 from the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital (service of Dr. Fred Wise). A large majority of the patients (54) were hospitalized, for the entire period of the treatment or for part of it, in the Metropolitan Hospital. Mapharsen was given three times weekly. In order to avoid a Herxheimer reaction, we began treatment, with the exception of cases of seronegative primary syphilis, with a bismuth injection, followed by an arsenical, the arsenical being started with one half of the maximum dosage suitable for each particular case.

The total number of mapharsen injections given to 61 patients was 1,069. Twenty-six patients discontinued treatment after they had received on the average only 10.4 injections of mapharsen. Thirty-five patients completed the course of treatment and received on the average 23.9 injections of mapharsen. The majority of these patients were under treatment for only eight weeks. In a few cases, however, because of some mild reactions, the treatment schedule and dosages were somewhat modified and the treatment continued for a few weeks longer.

Bismuth was given concurrently once a week. Icterus indices, serologic tests, and urine examinations were done once a week. Complete blood counts were done only in cases of complications.

The majority of the patients who completed the treatments underwent a lumbar or cisternal puncture before they were discharged. A follow-up letter was given to the patient leaving the hospital, and he was advised to show the letter to any physician he consulted or any medical officer. In this letter the kind of treatment the patient had received was described, and cooperation in the evaluation of this method of treatment was requested. It was suggested that examination and blood tests be repeated at one-month intervals for six months following treatment, and at two-month intervals for the next six months, and three-month intervals for the second year.

The letter also contained a request that no further specific treatment should be given, unless there was clear-cut evidence of clinical relapse, or the strength of the quantitative blood test increased significantly.

Those patients who requested a discharge before the intensive method was completed were referred to the Board of Health or some other clinic for further routine antisyphilitic therapy.

## Effect of Intensive Therapy on Visible Lesions

The average amount of mapharsen required for the disappearance of primary lesions was 254 mg. The average time required was 12.6 days. The average number of injections given was five of mapharsen and two and a half of bismuth. The average amount of mapharsen required for the disappearance of secondary lesions was 394 mg. The average time required was

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We wish to thank Dr. Leo Lebowitz, former resident at the

assistance in looking up records of patients, and checking the after-effects of treatment. We also thank Miss Stella Perkins for her assistance in collecting data, and Miss Hazel Schuler for her help in following up cases.

TABLE 1.—EFFECT OF THERAPY ON THE SEROLOGIC REACTIONS OF PATIENTS WHO WERE NOT FOLLOWED UP AFTER TREATMENT WAS COMPLETED

Name	Diagnosis	No. of Mapharsen Injections Given	Total Amount of Mapharsen (in Mg.) Given per Kg. of Weight	Total Amount of Mapharsen Given (in Mg.)	Negative Serologic Reaction Remained Negative	Serologic Reaction Reversed to Negative before Treatment Was Completed	Serologic Reaction on or About the Time When Treatment Was Completed
B. L.	Seropositive primary	25	22.8	1,705	...	.....	Wassermann 4+
B. M.	Seronegative primary	23	20.8	1,400	1	.....	Kahn 2+ Negative
G. J.	Seronegative primary	21	19.2	1,230	1	.....	Negative
G. F.	Seropositive primary	24	23.5	1,410	...	.....	Wassermann 4+
J. R.	Seropositive primary	21	17.4	1,220	...	After 14 injections (860 mg.)	Kahn 3+ Negative
J. L.	Secondary	23	21.1	1,270	...	After 19 injections (1,095 mg.)	Negative
Mc. J.	Seronegative primary	19	18.5	1,110	1	.....	Negative
M. H.	Seronegative primary	24	23.0	1,380	...	After 10 injections (540 mg.)	Negative
M. L.	Seronegative primary	18	17.3	1,040	...	After 15 injections (870 mg.)	Negative
P. K.	Seropositive primary	26	21.1	1,475	...	After 19 injections (990 mg.)	Negative
P. B.	Seropositive primary	20	19.8	1,170	...	.....	Wassermann 1+
R. L.	Secondary	24	21.0	1,180	...	.....	Kahn 1+ Wassermann 4+ Kahn 4+
S. J.	Seropositive primary	26	22.2	1,380	...	After 24 injections (1,260 mg.)	Negative
W. J.	Seropositive primary	24	23.1	1,270	...	.....	Wassermann 4+
W. J.	Seropositive primary	19	16.8	1,240	...	.....	Kahn 4+ Wassermann 4+
J. M.	Secondary	21	17.0	810	...	.....	Kahn 4+ Wassermann 2+
C. W.	Seropositive primary	24	22.4	1,525	...	.....	Kahn 3+ Negative

17.6 days. The average number of injections given was 7.4 of mapharsen and 3.2 of bismuth.

*Case 1.*—In one patient with secondary syphilis, D. B., the lesion healed first after five injections of mapharsen (total amount 220 mg.), and two injections of bismuth were given within fifteen days. Two days later, while the patient was still under treatment, two small, pea-sized, well-defined, eroded papular lesions appeared on each side of the meatus. The darkfield examination revealed the presence of *Spirochaeta pallida*. These lesions healed only after eight injections of mapharsen and three of bismuth were given. Altogether, in order to clear up the secondary eruption and the cutaneous relapse it required fourteen injections of mapharsen (total amount, 715 mg.) and five injections of bismuth. The time required was thirty-seven days. We also had the opportunity of observing a case of arseno-resistant syphilis.

*Case 2.*—O. S., 21, a colored man, was admitted to the Metropolitan Hospital in May, 1943, with the history of an eruption of three weeks' duration. The eruption was most pronounced on the trunk, upper and lower extremities, and around the anus. It was composed of papular and papulosquamous lesions and was accompanied by a generalized adenopathy. Spirochetes were found in the serum of one of the lesions. Intensive therapy was instituted. In spite of twenty-six injections of mapharsen and nine of bismuth many lesions failed to heal. Edema of the prepuce and of the glans also persisted. Biopsy from one of the lesions confirmed the diagnosis of syphilis. The Wassermann and Kahn tests

showed partial reversal; the Wassermann was 2 plus and Kahn 2 plus one week after mapharsen was discontinued. A case of an infectious relapse, which developed during the second month of arsenotherapy, was reported recently by Schoch and Alexander.<sup>5</sup>

### Effect of Intensive Therapy on the Serologic Reactions

Thirty-five patients completed the course of treatment and received on the average 23.9 injections of mapharsen and 9.1 injections of bismuth salicylate. Among these 35 there were 18 whom we were able to follow up for a certain length of time, following the completion of the intensive method of therapy. The period of post-treatment observation ranged from three weeks to fourteen months. In spite of every effort made the other 17 patients could not be followed up. Among these 35 patients were 7 with seronegative primary syphilis, 16 with seropositive primary syphilis, 11 with secondary, and 1 with latent syphilis (see Tables 1 and 2).

In 20 of 34, or in 58.8 per cent of early syphilitic cases the serologic reactions reversed to negative (in seronegative cases the serologic reactions remained negative). See Table 3. In 2 other cases the serologic reactions reversed to negative; however, the results should be accepted with reservation (cases P. B. and S. J.).

*Case 3.*—P. B., a man with seropositive primary

TABLE 2.—ILLUSTRATING THE EFFECT OF INTENSIVE TREATMENT ON THE SEROLOGIC REACTIONS OF PATIENTS WHO WERE UNDER OBSERVATION AFTER TREATMENT WAS COMPLETED

Name	Diagnosis	Amount of Mapharsen (in Mg.) Given	Total Amount of Mapharsen (in Mg.)	Duration of Treatment	Serologic Reactions Reversed to Negative before Treatment Was Completed	Serologic Reaction Reversed to Negative after Treatment Was Completed	Remission	Remarks
B. J.	Seropositive, primary	26	23.6	8 1/2 months	After 16 injections (945 mg.)	...	3 months after treatment was completed	Wassermann was +
B. R.	Seropositive, primary	19	15.2	3 1/2 months	...	...	...	...
B. D.	Secondary	24	1.265	11 months	...	4 months after	...	...
B. S.	Secondary	27	1.350	7 months	...	1 month after	...	...
G. J.	Secondary	23	1.375	3 weeks	...	3 weeks after	...	...
G. K.	Seropositive, primary	22	20.1	3 months	After 11 injections (680 mg.)	...	...	...
M. G.	Secondary	24	19.0	3 months	...	3 months after	...	...
O. J.	Latent	28	23.1	5 months	...	...	After 5 months serologic reaction did not change	...
P. A.	Seropositive, primary	24	1.525	7 months	...	1 month after	...	...
P. B.	Seropositive, primary	24	1.180	7 months	...	7 months after	...	...
R. J.	Secondary	24	20.0	2 1/2 months	...	2 1/2 months after	Spinal fluid was normal except for a 1+ Wassermann reaction in 0.2-0.8 of fluid	...
S. J.	Primary and secondary	35	2.165	14 months	After 30 injections (1,565 mg.)	...	...	...
S. J.	Seropositive, primary	25	1.470	1 month	...	1 day after	1 week after treatment was completed Wassermann and Kahn 2+.	Atresormentant
S. O.	Secondary	26	24.1	1 1/2 months	...	...	...	...
S. J.	Seropositive, primary	22	15.2	1 year	After 19 injections (1,125 mg.)	...	...	First spinal fluid gave irregular reaction; second spinal fluid was negative
Y. R.	Seropositive, primary	22	22.7	3 weeks	...	...	3 weeks after treatment was completed Wassermann was 2+	...
H. R.	Secondary	31	23.5	3 weeks	...	2 weeks after	...	...
C. W.	Seropositive, primary	24	1.550	3 weeks	...	...	5 weeks after treatment was completed Wassermann was B. H. P. = 3+, B. H. C. 4+ 4+.	Kahn 3+

TABLE 3.—EFFECT OF INTENSIVE TREATMENT ON THE BLOOD SEROLOGIC REACTION OF PATIENTS WITH EARLY SYPHILIS (ANALYSIS OF TABLES 1 AND 2)

Total number of patients who completed treatment	34
Number of patients whose serologic reaction reversed to negative (or seronegative cases which stayed negative)	20 (58.8%)
Number of patients whose serologic reaction reversed to negative (results accepted with reservations)	2 (5.8%)
Number of patients whose serologic reaction reversed partially (average follow-up time 6.4 weeks)	6 (17.6%)
Number of patients whose serologic reaction remained unchanged on or about the time when treatment was completed (no further follow-up was done)	4 (11.7%)
Number of patients who presented therapeutic failures	2 (5.8%)

TABLE 4.—INFLUENCE OF THE SPACE OF THE STIMULATING INJECTION ON THE AVERAGE SEROLOGIC REACTION TO REVERSE A POSITIVE SEROLOGIC REACTION TO NEGATIVE (ANALYSIS OF TABLES 1 AND 2)

All Stages of Syphilis	Sero-negative	Sero-positive
Primary	21	13
Secondary	7	5
Average number of mapharsen injections given before the serologic reaction reversed to negative	21.3	22.3
Average amount of mapharsen given before the serologic reaction reversed to negative	1,100 mg.	785 mg.
Average amount of mapharsen given before the serologic reaction reversed to negative	1,100 mg.	1,166 mg.
Average amount of mapharsen given before the serologic reaction reversed to negative	1,100 mg.	1,480 mg.

syphilis, received twenty-four injections of mapharsen (total amount 1,180 mg.). At about the time when the treatment was completed, his blood serology was 4 plus. He was discharged from the hospital but he did not report for further checkup. Through the efforts of the Social Service he was located seven months later. The blood serology was checked and was found to be negative. We found out, however, that since his discharge from the hospital, he had received 1 cc. of bismuth salicylate and 0.45 cc. of neoarsphenamine given to him in some clinic about two weeks before the negative serologic reaction was obtained. We don't think that this amount of treatment could greatly influence the results of the serologic test. And we accept the case, with some reservations, as one in which the results of the intensive therapy were probably good.

*Case 4.*—The blood serologic reaction of S. J., a man, reversed to negative on March 29, 1943, after nineteen injections of mapharsen were given, and has remained negative (one-year observation). The first spinal fluid examination was done two months after the discontinuation of therapy and gave an irregular reaction. The Wassermann with cholesterinized antigen was plus-minus in 0.4 cc. of fluid.

The colloidal gold curve was 4455543100. Eight and one half months later, on April 17, 1944, another spinal-fluid examination was done, and the spinal fluid was found to be completely negative. From the date of the first spinal-fluid examination to the time of the second one, the patient received on various dates a total of 6 cc. of 10 per cent bismuth salicylate in oil suspension, and 1.0 of neoarsphenamine.

This amount of therapy could hardly change a positive spinal fluid into a negative one. We think, therefore, that the laboratory findings of the first spinal-fluid examination were probably caused by some technical error. And we believe, with some reservation, that the results of the intensive therapy in this case were probably good.

In 6 out of 34, or 17.6 per cent of the cases, the serologic reactions reversed partially (average follow-up time was 6.2 weeks). In 4 out of 34, or in 11.7 per cent, the serologic reactions remained unchanged on or about the time when treatment was completed (no further follow-up was done).

Two cases out of 34, or 5.8 per cent, may be considered as therapeutic failures. One was the case of S. O., the patient with arseno-resistant syphilis (see above). The other was that of secondary syphilis in which the serologic reaction of the blood became completely negative two and a half months after completion of the intensive therapy (twenty-four injections of mapharsen, total amount 1,105 mg., and eight injections of bismuth). The spinal fluid was normal except for a plus-minus Wassermann reaction to 1 cc. of the fluid. A spinal puncture was repeated three weeks later. The spinal fluid was found to be

normal again except for a 1 plus Wassermann reaction to 0.2–0.8 cc. of fluid.

Taking into consideration that in the cases in which the serologic reactions reversed partially this improvement was present after an average of only 6.2 weeks of post-treatment observation, we are justified in believing that these 6 patients will probably show further improvement in their serologies within the next few months. We are justified in adding these 6 cases to the 20 in which the serologic reactions reversed to negative, and we may say that in 26 out of 34 cases of early syphilis, or 76.4 per cent, the results of intensive treatment were good. (We did not include in this group the two patients, S. J. and P. B., in whom the results obtained were accepted with reservation). Among the patients who completed the treatment there were 4 in whom the blood serologic reactions reversed to negative, and remained negative throughout the time of observation (seven to fourteen months) (see Table 2). The spinal fluid was found to be normal immediately following the termination of treatment. In one case, the spinal fluid was re-examined fourteen months later and found to be normal. One patient developed a probable case of reinfection.

*Case 5.*—B. J., 29, male, completed the intensive therapy on May 16, 1943, and since then the Wassermann and Kahn tests of the blood taken about once a month were found to be negative and remained negative until and including December 30, 1943. The spinal fluid was found to be normal. On January 24, 1944, he appeared in the office of one of the authors (G. A.) presenting two lesions on the penis of five or six days' duration. He stated that for the last few weeks he had had intercourse with five different women. The last intercourse was about January 10 or 12, about ten days before the lesions appeared. The lesions were pea- to dime-sized, well defined, indurated, and were located about one inch from the region of the original chancre. There was a moderate bilateral, indolent inguinal adenopathy. A darkfield examination of the serum from the lesions showed the presence of *S. pallida*. Serologic tests were taken every other day. The results were as follows:

January 25:	Wassermann—negative..	Kahn—2 plus
January 27:	Wassermann—B.H.P....	minus, plus-minus
	B.H.C....	1 plus, 2 plus
	Kahn.....	2 plus
	Kline diagnostic.....	1 plus
	Kline exclusion.....	3 plus
January 29:	Wassermann—negative..	Kahn—negative
February 1:	Wassermann—B.H.P....	plus-minus 1 plus
	B.H.C....	3 plus 4 plus
	Kahn.....	plus-minus
February 3:	Wassermann—B.H.P....	4 plus 4 plus
	B.H.C....	4 plus 4 plus
	Kahn.....	1 plus
February 5:	Wassermann—B.H.P....	4 plus 4 plus
	B.H.C....	4 plus 4 plus
	Kahn.....	4 plus

The results of the tests done on January 29, 1944, most probably were due to some mistake

TABLE 5.—INFLUENCE OF THE STAGE OF THE SYPHILITIC INFECTION ON THE TIME REQUIRED FOR THE REVERSAL OF A POSITIVE SEROLOGIC REACTION TO NEGATIVE

	All stages	Sero-negative	Sero-positive	Secondary
Total number of patients whose serologic reactions reversed to negative	17	3	7	7
Number of patients whose serologic reactions reversed to negative before treatment was completed	3	3 (100%)	4 (57.1%)	2 (28.6%)
Number of patients whose serologic reactions reversed to negative after treatment was completed	8	0	3 (42.9%)	5 (71.4%)
Average post-treatment time required for reversal of positive serologic reactions to negative	0		1 5 weeks	7 4 weeks

in the laboratory. After the diagnosis was established the patient received the following treatment:

January 27 Bismuth—1 cc  
 January 29 Mapharsen—30 m m  
 January 30  
 February 1  
 February 3  
 February 5

The patient was inducted into the army on February 8, 1944.

Table 4 illustrates the influence of the stage of the syphilitic infection on the amount of treatment necessary to reverse a positive serologic reaction to negative. While the average number of mapharsen injections given before the serologic reactions reversed to negative was 21.3 for all forms of early syphilis, it was 13.7 for seronegative primary syphilis, 20.5 for seropositive primary, and 25.3 for secondary syphilis.

As to the average of the total amount of mapharsen given before the serologic reaction reversed to negative, it was 1,190 mg of mapharsen for all forms of early syphilis, only 785 mg for seronegative primary, somewhat more—1,166 mg—for seropositive primary and the largest amount (1,480 mg) was for cases of secondary syphilis.

The stage of the syphilitic infection also had an influence on the time required for the reversal of the positive serologic reaction to negative (see Table 5). In 9 cases the serologic reaction reversed to negative before the treatment was completed. Among these there were 3 seronegative cases, or 100 per cent of the seronegative group, 1 seropositive case, or 57.1 per cent of the seropositive group, and only 2 secondary cases, or 28.5 per cent of the secondary group,

SHIP BETWEEN ARSEN GIVEN PER KG IN THE SERO AND SECONDARY

	Average Amount of Mapharsen (in Mg.) Given per Kg of Weight	Total Amount of Mapharsen Given (in Mg.)
Patients whose serologic reactions reversed to negative	22.3	1,481
Patients whose serologic reactions reversed partially	20.2	1,238
Patients whose serologic reactions remained unchanged on or about the time when treatment was completed	20.3	1,230
Patients who presented therapeutic failures	22.0	1,432

in which the serologic reactions reversed to negative. The effect of the therapy on the serologic reactions was influenced to a certain degree by the total amount of mapharsen given per kg of weight (see Table 6). Patients whose serologic reactions reversed to negative received on the average a total amount of 22.3 mg of mapharsen per kilo of weight (total amount 1,481 mg).

Those patients whose serologic reactions reversed partially received on the average 20.2 mg per kg of weight (total amount 1,238 mg). Those whose serologic reactions remained unchanged on or about the time when treatment was completed received on the average 20.3 mg per kg of weight (total amount 1,230 mg).

Among those cases in which the serologic reactions reversed to negative only after the treatment was completed, the seropositive group required an average of 1.5 weeks only, while the secondary cases required an average of 7.4 weeks.

We treated only one case of latent syphilis. This patient received twenty-eight injections of mapharsen (total amount 1,715 mg) and thirteen injections of bismuth. The serologic reaction did not show any improvement after five months of post-treatment observation.

### Untoward Reactions

Among the 61 patients who received 1,069 injections, there were 34 who complained of or presented eighty-one reactions. Among these reactions fifty were of a mild evanescent character, such as nausea and vomiting or headache on the day of the treatment, or fever up to 101 F, which lasted for a few hours. Some of the patients in this group complained of occasional weakness or dizziness, pain in the abdomen, or diarrhea. All these mild reactions usually did not recur when the dosage of mapharsen was

TABLE 7.—COMPARISON OF THE PERCENTAGES OF OUR PATIENTS EXHIBITING TREATMENT REACTIONS WITH THE PERCENTAGES OF PATIENTS TREATED BY THE INTRAVENOUS DRIP METHOD\*

Our Figures		Elliott's First Series	Figures Second Series
Reactive cases	55.7	91.2	95.5
Fever	11.4 Secondary fever	24.0	56.9
Toxicodermas	9.8	8.6	13.9
Nausea, vomiting, diarrhea	11.4	51.7	67.8
Renal damage	3.2	0.4	0.6
Liver damage	3.2	8.8	9.9
Motor neuritis	0	0.4	0.6
Sensory neuritis, or neur- algia	3.2 Sensory neuritis	4.5	7.0
Cerebral, mild	8.1	23.2	38.0
Serious: nonfatal	1.6	0.4	0.6
fatal	0	0.2	0.4

\* Figures taken from articles by Elliott, *et al.*: J.A.M.A. 117: 1161 (Oct. 4) 1941.

diminished. Eight patients developed Herxheimer reactions. Six of these had an elevated temperature (100–103 F.) on the day of the injection. One showed a marked swelling of the prepuce, one complained of pain in the stomach radiating to the back, one had a Herxheimer reaction in the form of a pruritus lasting for one day after the first injection.\*\*

There were 18 patients who presented twenty-three delayed reactions. Six developed some eruption or pruritus. These were of a minor character and did not delay further treatment in any noticeable way. Two patients developed eruptions which most likely were not caused by the mapharsen therapy, but were only coincidental to it. In one case it was folliculitis, in the other one it was a pustular eruption. In another case a papulopustular dermatitis reappeared even after the dosage of mapharsen was decreased. It was considered important enough to warrant discontinuation of the intensive method. One patient developed a probable trigeminal neuralgia lasting for about two weeks, one developed neuritis lasting for a few days only, two had recurrent attacks of fever, and one a severe form of an ulcerative stomatitis.

Two patients presented disturbances in the hemopoietic system (mild leukopenia in one case, and increase in the percentage of band forms of polynuclears in the other). Reactions were serious enough to warrant the discontinuation of the intensive therapy in 7 cases. Two of these cases (one jaundice and nephritis, the other encephalopathy) are noteworthy.

Case 6.—M. W., 21, male, colored, was admitted to the Metropolitan Hospital on August 19, 1943, with the diagnosis of primary syphilis. Follow-

ing the fourth injection of mapharsen (total amount of mapharsen given was 210 mg.), the patient developed chills and fever up to 105 F. for three days. The patient complained of aches and pains over the entire body, and some nuchal rigidity was present. A complete blood count was normal except for the leukocytosis (21,500). The spinal fluid was found to be normal. The urine, on August 31, 1943, showed the presence of granular casts which lasted for five weeks. The patient began to show some yellowish discoloration of the conjunctivae, though the icterus index was only 9. It did rise, however, gradually and reached 100 at one time.

He was transferred to the medical department,† where he was treated with daily infusions of 1,000 cc. of 5 per cent glucose solution for one week. After that high carbohydrate and high protein diet was instituted. For some time he received 50 Gm. of sugar twice a day as a supplement to his diet. He continued to improve. On December 2, 1943, about three months after the onset of the jaundice, the icterus index was 10.2. Besides the above-mentioned medications, he received, during almost the entire time, crude liver extract injections, 1–4 cc., three times weekly, and small doses of bismuth sodium tartrate or bismuth salicylate. He was discharged from the hospital and referred to the clinic on December 16, 1943. On this day, three and one-half months after the onset of the jaundice, the icterus index was found to be normal (6.5). It is interesting to note that a 4-plus serologic reaction changed to negative following four injections of mapharsen (total amount 210 mg.) and two of bismuth salicylate (4 cc.) and six of bismuth sodium tartrate.

Case 7.—W. L., 25, male, colored, developed a severe headache on February 9, 1943, one day after the sixth injection of 60 mg. of mapharsen (total amount of mapharsen given was 330 mg.). The next day (February 10, 1943) he vomited and complained of feeling very ill; his temperature was 100 F. by mouth; there was some nuchal rigidity, but the Kernig sign was negative. On February 11, 1943, the patient stated that he had had frequent headaches for the last four or five years, but the headache for the last few days was exceptionally severe (frontal and occipital). On February 12, 1943, a lumbar puncture was performed and 20–25 cc. of fluid was removed. The fluid spurted under increased pressure. According to the patient the headache disappeared almost completely, five minutes after the puncture. The cell count was 225 (mostly monocytes); the globulin was not increased; the Wassermann test was negative; and the colloidal gold curve was normal. The patient felt very good after the lumbar puncture; he remained in the hospital for two more weeks, during which time he felt perfectly normal and received bismuth therapy. It is noteworthy that in this case, following six injections of mapharsen (total amount given was 330 mg.) and five injections of bismuth a 4-plus serologic reaction reversed to negative.

\*\* Recently a "fever conjunctival injection-facial edema syndrome" following the intensive therapy was described by Cole.<sup>4</sup>

† Permission to publish these data was given by Dr. Linn J. Boyd, director, Department of Medicine, Metropolitan Hospital.

One patient presented an icterus index of 16.0. With the exception of two cases of nephritis, there were no cases of real renal damage. One patient complained of frequent urination and some pain in the kidney region. Urine examination revealed nothing abnormal except a faint trace of albumen. Five patients had faint traces of albumen in the urine, lasting for few days only, which cleared up while the patient was under treatment with mapharsen.

It is noteworthy that four of our patients were being treated during ten days for concomitant gonorrhea with sulfathiazole. In one of these cases mapharsen was instituted only after sulfathiazole was discontinued. This patient did not show any complications. The other three, however, received mapharsen injections once or twice weekly while receiving 3-4 Gm daily (during ten days). These 3 patients had, during this time, one or several attacks of fever of 100-104 F.

*Case 8*—One of our patients, S. J., developed at different times several reactions, such as severe Herxheimer, severe pain in the abdomen for twenty-four hours, pains in the arms and legs lasting for a few days, changes in the blood count (polymorphonuclears 41 per cent, band forms 12 per cent), severe trigeminal neuralgia lasting for about two weeks. However, by delaying the injections of mapharsen for several days or by decreasing the dosage we managed to avoid more serious complications and we were successful in completing the necessary therapy. It lasted, however, three months and five days.

Table 7 shows the comparison of percentages of our patients exhibiting treatment reactions with the percentages of patients who were treated by the intravenous drip method.

It can be seen that, with the exception of toxicodermas, renal complaints, and nonfatal encephalopathies, the percentage of total patients who exhibited specific treatment reactions was much lower in our group than among the patients who were treated by the drip method. As to the toxicodermas, the percentages were about the same in both groups. We have to consider the fact, however, that in two of our patients it was unlikely that the eruptions (folliculitis, pustular eruption) were caused by mapharsen therapy, and that would lower the percentage of toxicodermas in our group to 6.6. Besides that, the toxicodermas among our patients were mostly of the nonserious type. There was not a single case of exfoliative dermatitis. As to the greater percentage of nonfatal encephalopathies in our group, 1.6 versus 0.4-0.6 in Elliott's figures, this difference was well compensated for by the complete absence of fatal encephalopathies in our group whereas in Elliott's group the percentage

of patients who developed fatal encephalopathies ranged from 0.2 to 0.4.

### Comment

With the exception of the arseno-resistant case, and the case in which cutaneous recurrences appeared while the patient was under treatment, visible lesions responded properly to the intensive therapy. Primary and secondary lesions healed in an average of 12.6 and 17.6 days, respectively, following an average of 5.0 and 7.4 mapharsen injections, respectively.

As for the effect of this therapy on the serologic reaction, in 58.8 per cent of the cases the serologic reactions reversed completely to negative, while in the other 17.6 per cent the serologic reactions reversed partially. And if we add these percentages, we may say that in about 76.4 per cent the results of the treatment were good. Among these cases were 4 in which the serologic reaction reversed to negative and remained negative throughout the time of observation (seven to fourteen months). One of these cases developed a probable reinfection.

The average number of mapharsen injections and the average total amount of mapharsen necessary to reverse a positive serologic reaction to negative increased in direct proportion to the increase of the duration of the syphilitic infection. The stage of the infection also had an influence on the time required for the reversal of the serologic reaction to negative. In 100 per cent of the seronegative group, in 57.1 per cent of the seropositive group, and in only 28.5 per cent of the secondary cases the serologic reactions reversed to negative before treatment was completed.

The total amount of mapharsen given per kilo of weight influenced, to some degree, the results of therapy. In cases of seropositive primary and secondary syphilis in which the serologic reactions reversed to negative the patients received on the average 22.3 mg of mapharsen per Kg of weight (average total of mapharsen received was 1,481 mg).

There were only two therapeutic failures in our group (5.8 per cent). Taking all the above-mentioned factors into consideration, it appears to us that the method of Eagle and Hogan is quite efficacious.

In two cases in which serious reactions occurred (jaundice, encephalopathy), the serologic reaction reversed to negative after only four and six injections of mapharsen, respectively, and eight and five injections of bismuth, respectively, were given.

The untoward reactions observed among our cases were in most of them of a mild character. The treatment had to be discontinued because of the severity of reactions in only 7 cases. We



stress the fact that only two serious reactions were observed (jaundice, encephalopathy) and that no cases of exfoliative dermatitis were seen, and most important of all, there were no fatalities. We feel that the method of Eagle and Hogan is a comparatively safe procedure, in comparison with other intensive methods, especially the intravenous drip method.<sup>7,8</sup>

Because the method of Eagle and Hogan may, and does, cause more untoward reactions than the old routine procedure of antisyphilitic therapy, it is suggested that it should be used with caution, preferably under the supervision of a trained syphilologist. Hospitalization is not absolutely necessary, although it is very advantageous.

The lack of cooperation on the part of some patients as far as completion of the minimum amount of treatment and follow-up are concerned, presents a difficult problem. And it is therefore suggested that this method should be employed preferably in cases of intelligent, cooperative, and careful patients. These patients should be told, however, of the experimental character of this procedure, and of the

possibility, although rare, of grave complications.

## Conclusions

1. The method of Eagle and Hogan appears to be an efficacious method of antisyphilitic therapy.

2. It causes fewer reactions than the intravenous drip method.

3. It is still in the experimental stage, and it should be used cautiously, preferably under the supervision of a trained syphilologist.

4. This method may be employed when dealing with cooperative and careful patients.

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## SEROLOGIC ASPECTS OF EARLY SYPHILIS

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THE laboratory phase in the serum diagnosis of syphilis is portrayed by the results of the serodiagnostic tests. The serologic manifestation varies with the stage and duration of the syphilitic infection and the normal defensive forces of each individual, and is modified by the treatment procedures.

The type and number of serologic tests which may be selected for laboratory studies will vary with specific clinical programs. The detailed serologic examinations by a battery of tests, frequently used in special diagnostic problems or in research and experimental therapeutic investigations, may not be a practical serologic routine for conventional case-finding, diagnostic, and therapeutic studies. The public health laboratory and routine clinical laboratory cannot be expected to furnish such extensive service. In a few instances the routine may be elaborated to include comprehensive serologic testing, but this can be effected only by a longer or shorter period of transition.

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From the Venereal Disease Research Laboratory, U.S. Marine Hospital, Staten Island, New York.

Before establishing a new serologic routine within a laboratory due consideration should be given the adequacy of the physical space and equipment, the skill and experience of the technical personnel, and the average daily specimen load. A daily load of several thousand or even several hundred blood and spinal fluid specimens can be handled properly only in those laboratories which have well-organized serologic routines especially integrated for their respective activities. At all times the tests should be performed according to the latest modifications of accepted techniques utilizing standardized antigens and test reagents together with adequate intra- and inter-laboratory control measures. The results of a single serodiagnostic test properly conducted are more valuable than the results of any given number of tests performed with random unauthorized modifications designed to ease the serologic burden.

The seronegative picture of the invasive period of syphilis is followed by a transition through the doubtful to the positive pattern which develops soon after the clinical appearance of the chancre. The serologic titer, gaged by quantitative tests, continues to rise to a peak for each patient. The highest titers are observed in the secondary stage

CHART 1.—THE DEVELOPMENT OF TYPICAL SEROLOGIC PATTERN FROM SERONEGATIVE TO STRONGLY POSITIVE PHASE

Case 16. T. L.—Primary, 19 Days' Duration

Days Before Start of Therapy	Kline Exclusion	Maxim Flocculation	Kline Diagnostic	Kahn Standard	Hinton Standard	Eagle Flocculation	Kolmer Comp Fix	Quantitative		Kolmer
								Mazum	Kahn	
17	Doubtful	—	—	—	Doubtful	—	—	—	—	—
16	Doubtful	—	—	—	Positive	—	—	—	—	—
15	Doubtful	Doubtful 4	—	Doubtful 1	Positive	Doubtful	—	—	—	—
14	Positive	Positive 4	Doubtful 1	Positive 1	Positive	Positive	—	—	—	—
13	Positive	Positive 4	Positive 3	Positive 4	Positive	Positive	—	—	—	—
12	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
11	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
10	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
9	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
8	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
7	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
6	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
5	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
4	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
3	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
2	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
1	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—
0	Positive	Positive 4	Positive 4	Positive 4	Positive	Positive	—	—	—	—

CHART 2.—DIVERSE PRETREATMENT SEROLOGIC PATTERN

Darkfield-Positive Primary Syphilis				
Case Number	Hinton Flocculation	Kahn Standard	Kline Diagnostic	Kolmer Complement Fixation
103	—	+	+	+
106	—	+	—	—
107	+	+	—	—
113	—	—	—	+
119	+	0	+	—
128	—	—	—	+
143	—	—	D	—
158	+	D	—	+
153	—	D	—	+
160	+	—	+	+

of syphilis. The favorable serologic response to treatment in early syphilis proceeds gradually to the negative state. The reactivity pattern is not pathognomonic of syphilis, as similar patterns may be observed in other diseases, such as leprosy, malaria, virus pneumonia, infectious mononucleosis, vaccinia, and the common febrile disorders. The diagnosis of syphilis should not be made without carefully evaluating the anamnestic record, the clinical findings, and the combined laboratory data.

In a limited number of patients treated for darkfield-positive primary syphilis, the blood serum will maintain a consistently negative serologic pattern with all tests. Usually, when the primary lesion has been present less than a week the reagin content is below the detectable threshold of the serodiagnostic tests. In untreated primary syphilis, if blood specimens are obtained at frequent intervals, the number of doubtful and positive reports will increase and thereby formulate a definite serologic pattern for each individual serum. At the same time, the quantitative tests show evidence of increasing titer until a peak is reached (see Chart 1).

As a rule the more sensitive tests will be the first to give doubtful and positive reactions and

CHART 3.—DIVERSE POST-TREATMENT SEROLOGIC PATTERN

Darkfield-Positive Early Syphilis					
Patient	Eagle	Hinton	Kahn	Kline	Kolmer
E. F.	Positive	Positive	3	1 Doubtful	—
T. D.	—	Positive	—	1 Doubtful	—
F. M.	Positive	Doubtful	—	3	4
W. S.	—	—	2	1 Doubtful	4

CHART 4.—UNUSUAL SINGLE POSITIVE SEROLOGIC PATTERNS

Darkfield-Positive Primary Syphilis					
Patient	Eagle	Hinton	Kahn	Kline	Kolmer
H. G.	—	—	4	—	—
M. E.	—	—	—	—	3
C. H.	—	—	—	4	—
T. L.	—	Positive	—	—	—

CHART 5.—COMPLETE SEROLOGIC PICTURE SHOWING RAPID DEVELOPMENT AND DISAPPEARANCE OF PATTERN

Case 99. R. L.—Primary, 11 Days' Duration			
Days After Start of Therapy	Kline Diagnostic	Kahn Standard	Kolmer Complement Fixation
0	—	—	— — — —
5	2	± Doubtful	4 4 4 3 —
14	± Doubtful	—	1 ± — — —
42	—	—	— — — — —

Case 86. T. B.—Primary, 11 Days' Duration			
Days After Start of Therapy	Kline Diagnostic	Kahn Standard	Kolmer Complement Fixation
0	1 Doubtful	—	± — — — —
5	4	4	4 4 4 4 —
15	2	—	4 4 4 3 —
43	—	—	— — — — —

the last to show reversal to seronegativity. However, variations in the serologic pattern will be noticed in which a less sensitive test may give the first positive findings. If the serologic status is determined by a single test the report may be positive, doubtful, or negative according to the test employed. If two or more tests are used, the report may contain any combination of results but the entire picture will reveal the true serologic status. By specimen selection it is possible to demonstrate various reactivity patterns in the diagnostic and in the treatment phase (see Charts 2 and 3).

Rare and unusual serologic reactivity patterns are sometimes observed in darkfield-positive primary syphilis. Repeated examinations established test patterns of single positive reactions in a battery of six tests. This atypical pattern followed the usual course of seroreversal in the post-treatment observation period (see Chart 4).

It is realized that technical or other errors may cause atypical or changing patterns, but these can be easily identified when compared with the consistent individual reactivity pattern.

Even though the pretreatment serologic reports are negative, the majority of patients with darkfield-positive primary syphilis can sooner or later be classified as seropositive because the positive

CHART 7.—ALL-POSITIVE SEROLOGIC PATTERN

Case 37. E. R.—Secondary Syphilis, 8 Weeks' Duration			
Days After Start of Therapy	Kline Diagnostic	Kahn Standard	Kolmer Complement Fixation
0	3	3	4 4 4 4 4
6	4	4	4 4 4 4 4
13	3	4	4 4 4 4 4
71	4	4	4 4 4 4 4
128	4	4	4 4 4 4 4
187	4	4	4 4 4 4 4
260	4	4	4 4 4 4 1
371	4	4	4 4 4 4 ±

pattern develops during treatment. The development of the early reactivity pattern frequently appears to be accelerated by the institution of antisyphilitic treatment. The process may develop so rapidly that the true pattern may be masked, as several tests often become positive on the same day (see Chart 5).

The diagnostic tests have been used as indicators of the serologic response to various treatment schedules. The most satisfactory picture is the completely negative reactivity pattern observed in the syphilitic patient who is placed on appropriate treatment soon after the original lesion is discovered (see Chart 6).

Nearly all patients with primary or secondary syphilis will be in the seropositive phase for varying time intervals before therapy can be instituted. In early seropositive primary syphilis there may be a lag in the development of other demonstrable clinical lesions although there is an increase of the serologic titer which usually reaches the highest peak in secondary syphilis. Under successful therapy the rapidity of seroreversal appears to have some relationship to the duration of syphilis and the serologic titer.

It is noted in Chart 5 that the serologic response to treatment was rapid in the patients whose pretreatment reports were negative or doubtful. Patients with secondary syphilis may be expected to remain in the post-treatment

CHART 8.—COMPLETE SEROLOGIC PICTURE SHOWING APPARENT REVERSAL, THEN RELAPSE, AND FINALLY ACTUAL REVERSAL

Case 26A. H. S.—Darkfield-Positive Primary, 6 Days' Duration			
Days After Start of Therapy	Kline Diagnostic	Kahn Standard	Kolmer Complement Fixation
0	4	4	4 4 4 4 4
13	4	4	4 4 4 4 4
39	4	4	2 2 2 1 —
61	4	2	2 1 1 ± —
81	2	2	1 ± — — —
110	4	4	4 4 4 4 3

Retreatment			
198	4	4	4 4 4 4 —
243	4	4	2 2 ± — —
293	1 Doubtful	3	1 ± — — —
345	1 Doubtful	—	— — — — —
369	± Doubtful	—	— — — — —

CHART 6.—ALL-NEGATIVE SEROLOGIC PATTERN

Case 125—J. L.—Darkfield-Positive Primary, 5 Days' Duration			
Days After Start of Therapy	Kline Diagnostic	Kahn Standard	Kolmer Complement Fixation
0	—	—	— — — — —
5	—	—	— — — — —
15	—	—	— — — — —
79	—	—	— — — — —
131	—	—	— — — — —
192	—	—	— — — — —
248	—	—	— — — — —
281	—	—	— — — — —
309	—	—	— — — — —

CHART 9—QUALITATIVE AND QUANTITATIVE REPORTS IN POST-TREATMENT SEROLOGIC STUDIES

Case 35 O II—Primary, 19 Days Secondary 25 Days' Duration

Days After Start of Therapy	Kahn Standard	Kolmer Comp Fix	Mazzini Flocculation	Kahn	Quantitative Kolmer	Mazzini
1	Positive	Positive	Positive	4 4 4 4 3 —	4 4 4 4 4 2 —	4 4 4 4 3 1 —
8	Positive	Positive	Positive	4 4 4 4 2 —	4 4 4 4 4 3 —	4 4 4 4 2 1 —
13	Positive	Positive	Positive	4 4 4 4 3 —	4 4 4 4 4 2 —	4 4 4 4 1 1 —
20	Positive	Positive	Positive	4 4 4 4 2 1 —	4 4 4 4 4 1 —	4 4 4 4 3 1 —
27	Positive	Positive	Positive	4 4 3 2 — —	4 4 4 1 1 —	4 4 3 1 — —
34	Positive	Positive	Positive	4 3 2 1 — —	4 4 4 1 — —	4 4 3 1 — —
41	Positive	Positive	Positive	4 3 — — — —	4 4 4 1 — —	4 3 2 1 — —
49	Positive	Positive	Positive	4 — — — — —	4 4 4 — — —	4 2 2 1 — —
56	Doubtful	Positive	Positive	4 — — — — —	3 3 1 — — —	3 2 1 — — —
63	Doubtful	Positive	Doubtful	2 — — — — —	1 — — — — —	2 — — — — —
69	—	Positive	Doubtful	1 — — — — —	1 — — — — —	2 1 — — — —
91	—	—	Doubtful	—	—	—
126	—	—	—	—	—	—

NOTE Quantitation carried out in whole serum serum diluted 1 1 with saline serum diluted 1 2 with saline etc

positive phase two to four months longer than patients with primary syphilis. The serologic reactivity pattern of an occasional patient, however, may remain consistently positive throughout the first year of post-treatment observation (see Chart 7).

The failure to obtain a satisfactory serologic response to treatment is very distressing to the patient and presents a serious problem in therapeutic evaluation for the syphilologist.

The post-treatment serologic response does not always proceed to and remain in the seronegative phase. Serologic relapses give fairly typical reactivity patterns, such as is noted in Chart 8. The serologic response was favorable throughout the eighty-one days of post-treatment observation. A definite increase in positive findings was noted on the one hundred and tenth day, after which the patient was retreated. Following the second series of treatments the serologic response continued toward the negative zone, which was reached at the end of the first year.

Additional serologic data may be obtained by supplementing the qualitative tests with quantitative methods. The quantitative tests portray graphically the gradual reduction of reagin titer from the peak to the lower range of the qualitative tests which then record the last evidence of

positive findings. The quantitative tests are especially valuable in gauging serologic response, as they indicate the decreasing titer or the development of a serologic relapse, while at the same time the qualitative tests give only an unvarying positive report (see Chart 9).

### Summary

The reports obtained from a battery or series of different tests furnish essential data which can be correlated with the clinical status and therapeutic response. The number and type of serologic procedures will vary according to the need for a comprehensive report. The reports from a battery of four, or seven, or ten serodiagnostic and quantitative tests yield proportionately more complete serologic patterns which are helpful in the evaluation of new therapeutic measures and the conduct of other research investigations. A limited serologic routine will furnish sufficient data for the usual diagnostic purposes and for the evaluation of clinical response to an established treatment. If limited serodiagnostic services are used, it must be realized that certain syphilitic serums will escape detection and that the serologic reports may not be in complete agreement with the reports from another laboratory using different test procedures.

### Discussion of Symposium

Dr. Frank C. Combes, New York City—A symposium based on the intensive therapy of syphilis by methods applicable to ambulatory patients is particularly timely and the essayists have made valuable contributions to our knowledge of the treatment of this disease. The average busy physician, however, who is not in close touch with the development of intensive arsenotherapy, must be somewhat confused by the many and varied systems recommended by different investigators, but he must remember that all these methods are still in the experimental stage and must stand the test of time. Changes are still being made in interval and dosage,

and so rapidly, I dare say, that by the time these papers are published the schedules recommended will have been superseded by others, or by penicillin.

Thirty-two years ago Paul Ehrlich remarked that "as in the pursuit of fishing, anyone who wishes to catch the fish in a wide river will only succeed in obtaining a satisfactory result if net is attached to net and the last part of exit is barred, so for an experimenter in a wide field, the success depends on the harmonious working together of many."

In the various schedules used for intensive treatment of early syphilis, it is possible to standardize our methods, since most of the patients are young

and in robust health, their immunologic statuses are essentially identical, and the infections of each are in a relatively similar stage.

In any system of treatment it is essential that we attain a favorable balance between the parasitotropic action of the remedy and its organotropic action. As regards mapharsen, independent of the frequency of injection or duration of treatment, the vast majority of patients have been "cured" by 20-30 mg. per Kg., or approximately 1,500-2,000 mg. in a man weighing 60 Kg. It is necessary, primarily, to determine the margin of safety provided by any intensive procedure on a basis of over what period of time and in what individual dosage the remedy should be given. These depend upon toxicity of the drug as determined by the ability of the patient to absorb, detoxify, and excrete it.

Experience has shown that this margin of safety bears an inverse relationship to the time over which the drug is administered. The mortality in the usual weekly injection procedure, extending over a period of several months, is approximately 1 in 3,000. The administration of 1,200 mg. in a "five-day intravenous drip" has a mortality rate of one in 200. There are no reliable data for the one-day routine, but the arsenicals are far too toxic for administration of a curative dose in one twenty-four-hour period even when combined with hyperpyrexia.

The triweekly injection routine seems to possess the greatest margin of safety and simultaneously affords a high curative index. In addition it is applicable to ambulatory patients.

It is unfortunate that Drs. MacKee and Astrachan have been unable to follow more of their patients over a greater period of time. This is always a most difficult problem. At Bellevue I think we have been remarkably successful. Of course, we hospitalize all patients and have facilities available for simultaneously treating 200. In small groups these patients receive instructions regarding their disease and information concerning what we are trying to do for them.

Every effort is made during the patient's stay in the Hospital to secure his confidence. During his stay much information is obtained which might be of assistance in subsequently tracing him. This includes the names and addresses of friends and relatives, the referring agency, place of business, names and addresses of unions, churches attended, and clubs, draft board, home relief, WPA, driver's or chauffeur's licenses, auto registration number, social security number, and criminal record. Even with all this information it is often impossible to trace delinquents.

Dr. Cannon and his collaborators have presented a concise and complete review of intensive arsenotherapy, including a brief reference to the earlier investigators in this field. Many of the early favorable responses to intensive therapy must be taken reservedly because of lack of satisfactory diagnostic criteria and complement fixation tests of sufficient sensitivity and specificity.

I am surprised at the lack of serious accidents in the ten-day treatment in which 120 mg. of mapharsen is given daily. Of course, only about 80 patients are reported and a more extended series may afford

more reactions. According to our experience at Bellevue Hospital and the recorded experiences at the Chicago Rapid Treatment Center, reactions are much higher. In a series of 172 patients so treated at Chicago, 11.9 per cent of reactions were so serious that it was necessary to modify the schedule by reducing the mapharsen dosage by half. Cole, of Cleveland, in a series of 114 patients with an eight-week, and 95 with a ten-week schedule, in which 34 patients were lost from observation, in 24 or 14 per cent it was necessary to discontinue therapy because of reactions. Drs. MacKee and Astrachan had reactions sufficient in severity to require discontinuation of treatment in about 8 per cent of cases. It is interesting that no one reports a serious toxicoderma.

I still feel that patients should preferably be hospitalized for intensive therapy. If this is so, I believe the technic employed by Drs. Thomas and Wexler at Bellevue Hospital gives excellent results with a minimum of reactions. Briefly, this consists of ten daily injections of mapharsen (60 mg.) plus intravenous typhoid-paratyphoid vaccine on the second, fourth, sixth, and eighth days.

Under the schedule of treatment with arsphenamine, in which series 29 patients were treated at the Vanderbilt Clinic, 23 of whom were in the secondary stage, Dr. Cannon stated that all spinal fluids were negative at the beginning of treatment. Does this mean they were normal? If so, is not this unusual in an unselected group of patients with florid syphilis? The Cooperative Clinical Group found abnormal fluids in 56 per cent of patients with secondary syphilis.

I think all of the essayists should be congratulated on their valuable contributions to intensive arsenotherapy.

Dr. Girsch D. Astrachan, *New York City*—I wish to thank Dr. Combes and Dr. Rosenthal for their constructive criticisms. I agree with both of them that all the intensive methods which are in use are still in the experimental stages, and years will pass before we will come to any conclusion concerning their value and importance.

The main thing which we ought to remember is that in every intensive procedure which has been tried to date, between 1,200 and 1,800 mg. (total amount) of mapharsen, or about 20-30 mg. per kilogram of weight had to be given in order to achieve a so-called "cure."

It is also important to remember that a margin of safety of 6-8 is necessary to reduce the mortality of antisypilitic therapy to less than 1:1,000. This margin of safety would be provided by giving the total curative dose in triweekly injections for seven weeks. I believe that a mortality rate of 1:1,000 is the maximum number of fatalities which we may be justified in expecting even with the intensive method of treatment.

I agree with Dr. Combes that post-treatment observation is of paramount importance for further evaluation of therapy. It is, however, a very difficult problem, and in spite of the excellent work done by the social service department we could not follow up all of the cases.

I was glad to hear the discussers place so much

emphasis on the use of bismuth in antisyphilitic therapy. I have always believed in the concurrent administration of bismuth and arsenicals in young and healthy individuals.

The majority of our patients were hospitalized in the Metropolitan Hospital, however it is very difficult to keep patients in a hospital for more than a few weeks, but we did manage to keep about half of them for the entire course of therapy.

I was very much interested in Major Weitz's discussion of the Army schedule of treatment. It is an excellent method and it seems to me that this procedure or a modification of the one of Eagle and Hogan will probably turn out to be the best method of antisyphilitic therapy for the general practitioner to use.

We still don't understand, as Dr. Thomas pointed out, the causes of the so called resistant serologic reaction. It is quite a problem but I don't believe it

is very serious in late latent cases. I do feel, however, that at least two years of treatment should be given in order to prevent various kinds of complications due to late latent syphilis.

I was very happy to hear Dr. Rosenthal's plea for consideration of the patient first and the technique last, and I am in full agreement with him. It seems to me that the physician should have a frank discussion with the patient on the various methods of treatment, their dangers, advantages, and disadvantages, and the patient will then be able to decide which method he prefers. Most patients are quite capable of deciding for themselves whether they prefer the rapid method with the possible chance of serious complications, or the longer, tedious, but safer method of therapy. It should be the patient's privilege to select the manner in which he is to be treated.

### LASKER FOUNDATION ESTABLISHES MENTAL HYGIENE AWARD

Dr. George S. Stevenson, Medical Director of the National Committee for Mental Hygiene, has announced that the Albert and Mary Lasker Founda-

It will be conferred at the annual meeting of the Committee in the autumn of each year.

The purpose of the award is to recognize significant contributions to promoting mental health and to making the broad field and program of mental hygiene more familiar to the general public. Each year the award will be made for a contribution in some special aspect of the field of mental hygiene which seems to be of most immediate and current significance. The recipient of the award will be selected by an anonymous jury chosen annually for its competence to judge accomplishment in a particular field.

The award went this year to Col. William C. Menninger, MC, Chief Consultant in Neuropsychiatry, Office of the Surgeon General, U.S. Army. It was presented by Brig. Gen. Raymond W. Bliss, Assistant Surgeon General, U.S. Army.

The award this year was for mental hygiene

work related to the war. The recipient was chosen from among leaders who have done work in the general enhancement of the mental health of the men and women of the services, both while in service and during the period of rehabilitation. The work must either have been completed or have been tested and won general acceptance within the year preceding the granting of the award. Recipients will not necessarily be limited to persons in the United States.

If some outstanding contribution has been made abroad in a particular field, the award will be made jointly with the leading mental hygiene organization of that foreign country.

The Award Committee consists of Dr. Lawrence S. Kubie, chairman, Dr. Frederick H. Allen, and Miss Nina Ridenour. This committee determines the scope and method of granting the award and selects a jury of seven to nine to name the recipient.

The range of activities for which the award will be made will include psychiatric education, popular adult education (through books, articles, lectures, and plays), and popular child education (in schools, camps, playgrounds, community centers, churches and other group activities).

### AGAR STOCKPILES ARE GROWING

Stockpiles of agar, formerly dependent on supplies received exclusively from Japan, have now been improved to such an extent by newly developed domestic production and by imports from Mexico that restrictions on the use of agar have been removed, the War Production Board reported on August 14.

Agar is a jelly-like substance extracted from certain types of seaweed found on both the Atlantic and Pacific coasts. It is principally used in making bacteriologic culture media, but only the seaweed found on the West Coast yields the type of agar that can be used for the production of these media. Agar is also used in the preparation of medicinals,

pharmaceuticals, and food, and in the drawing of tungsten wire and the manufacture of dental impression compounds.

Domestic production of agar was accomplished as a result of close cooperation between industry and the Chemicals Bureau of WPB. The largest agar plant is situated in Los Angeles, California. Smaller agar production units have been established in Massachusetts, Virginia, the Carolinas, and Florida.

To insure fulfillment of any emergency needs for agar, a stockpile is being reserved by the Defense Supplies Corporation, a subsidiary of the Reconstruction Finance Corporation.

# THE EVALUATION OF NEWER DRUGS IN OPHTHALMOLOGY

WALTER S. ATKINSON, M.D., Watertown, New York

**I**N AN attempt to evaluate drugs used in ophthalmology not only the properties of the drugs but the medium in which they are given and the method of administration should be considered.

Buffered solutions, wetting agents, and iontophoresis have been shown to increase as much as fifteen times the penetrability and effectiveness of drugs used in the eye. Therefore, with the same drug quite different results may be obtained and erroneous conclusions may be arrived at by different observers if the drugs are not used in the same manner.

A brief consideration of a few well-known principles with respect to the method of using drugs in the eye may be of value.

Solutions isotonic with the tears cause less irritation when instilled in the eye than strongly hypotonic solutions. However, it is probably of more importance to have the reaction or pH correct for the solutions to be used in the eye. The advantages claimed for properly buffered drugs when instilled in the eye are:

1. They are more readily absorbed, which increases their action.
2. They smart less.
3. They are more stable, so that fungi and bacteria rarely grow in them.
4. Conjunctival congestion occurs less frequently after the prolonged use of drugs such as pilocarpine or physostigmine.

The pH of tears may vary with different diseases of the eye. It is sometimes desirable to test the pH of the tears before prescribing a solution to be used in the eye. This may be quickly approximated with nitrazine or similar paper.

In conditions that cause an acid lacrimal secretion an alkaline solution may be desirable. When the tears are alkaline, as they are in corneal injuries, an acid buffer solution often affords considerable relief.

In prescribing drops to be used in the eye, it is not practical to incorporate with each prescription the directions for buffering the drug. Therefore, if the pharmacist follows the simple directions suggested by Gifford<sup>1</sup> the drugs can be easily and satisfactorily buffered. Two solutions only are necessary to keep on hand, and they are as follows:

## Acid buffer solution:

Boric acid (anhydrous).....12.4 Gm.

Potassium chloride (anhydrous).. 7.4 Gm.

Distilled water.....1,000 cc.  
Stock solutions of sodium carbonate:  
Sodium carbonate (anhydrous)...21.2 Gm.  
Distilled water.....1,000 cc.

The desired reaction, varying from a pH of 5 to 9, may be obtained by the addition of different amounts of the stock solution of sodium carbonate to 30 cc. of the acid buffer solution, as shown in Table 1.

The selection of the buffer for the various drugs used in the eye is governed to some extent by the solubility of the drug. If possible, however, a buffer that causes the least irritation should be used.

By adding 1.5 cc. of the stock sodium carbonate solution to 30 cc. of the acid buffer solution in alkaline buffer solution with a pH of 7.6 is obtained. Gifford<sup>1</sup> recommends this for use as a collyrium and as a substitute for tears in mild epithelial dystrophy and chronic conjunctivitis in elderly persons. It has a soothing effect when instilled in the eye and is mildly antiseptic. Also, it is the buffer recommended for homatropine, atropine, scopolamine, physostigmine, and pilocarpine.

Tetracaine (pontocaine) hydrochloride comes in tablets already prepared so that a buffer is not required. When the tablet is dissolved in distilled water the solution has a pH of 6.7. A pH of 6.0 is recommended for zinc sulfate, cocaine, epinephrine, and paradrine. A buffer with a pH of 9.0 is required to dissolve fluorescein.

Wetting agents have been shown to greatly increase the penetrability of drugs through the cornea and thus improve their effectiveness. Bellows and Gutman<sup>2</sup> reported a marked increase in the concentration of the sulfonamide compounds in the aqueous by the use of wetting agents. Aerosol OS (isopropyl naphthalene sodium sulfonate), 0.5 to 1.0 per cent, was found to be the most effective one, and, they reported, increased the ability of sulfathiazole to penetrate the cornea and produced a concentration over fourteen times greater in the aqueous humor. It was also noted that local and systemic heat further increased the penetration of the sulfonamides by as much as 50 to 75 per cent.

These are important observations since, as pointed out by Bellows and Chinn,<sup>3</sup> the sulfonamide compounds, with the exception of sulfanilamide, penetrate the cornea poorly. Their studies have also shown that a higher concentration of the sulfonamide compounds is obtained in the anterior chamber by local application when

TABLE 1

Amount in cc	0	0.05	0.1	0.25	0.50	1.00	1.50	2.00	3.00	4.00	8.00
Reactions (pH)	5.0	6.0	6.2	6.75	6.95	7.2	7.6	7.8	8.2	8.4	9.0

they are used with wetting agents than from oral administration.<sup>2</sup> However, both local and general administration should be used when the highest concentration is desired. The use of wetting agents also improves the penetrability of other drugs, such as local anesthetics, antiseptics, and drugs used in the treatment of glaucoma and is a subject worthy of serious consideration.

The use of iontophoresis to obtain higher concentrations of the sulfonamide compounds in the cornea and aqueous humor has been reported by von Sallmann<sup>4</sup> and Boyd.<sup>5</sup> By iontophoresis von Sallmann<sup>4</sup> was able to increase the concentration of sulfadiazine in the aqueous humor as much as fifteen times more than by means of a corneal bath. By this method the concentration of sulfapyridine and sulfacetamide was also greatly increased in the cornea and aqueous humor. Boyd reported that the amount of sulfathiazole introduced by iontophoresis into the cornea was four times greater and in the aqueous five to nine times greater than by simple diffusion.

Another most interesting observation made by von Sallmann<sup>4</sup> is that the sulfonamide drugs penetrate the cornea more readily when it is ulcerated or abraded. The concentration in the cornea, aqueous humor, and vitreous humor is two to three times more than when the cornea is normal.

More recently von Sallmann<sup>6</sup> reported that six to nine times more atropine and scopolamine were introduced into the aqueous humor of rabbits by corneal iontophoresis than by a two-minute corneal bath. Unfortunately, iontophoretic application to the sclera did not increase the concentration in the vitreous.

By means of iontophoresis von Sallmann<sup>4</sup> obtained higher concentrations of the sulfonamides in the aqueous humor than those reported by Bellows and Gutman<sup>2</sup> with the use of wetting agents. However, wetting agents are easier to use, particularly for postoperative infections, than iontophoresis and so would be preferable provided an effective concentration can be obtained without damage to the cornea or lens.

In the consideration of newer drugs used in ophthalmology it is realized at once that few really new drugs have been introduced during the past few years.

Penicillin is thought of at once, and, although it was discovered by Fleming<sup>7</sup> fifteen years ago, its use as a therapeutic agent is new. Comparatively little penicillin has been available for use

by ophthalmologists, so that its true worth in the treatment of diseases of the human eye is difficult to accurately appraise. However, reports of its use experimentally by von Sallmann<sup>8</sup> in the treatment of intraocular infection is most encouraging. His report justifies the anticipation that striking results may be expected in the treatment of infections which are now considered hopeless.

Tyrothricin, a substance obtained from soil bacteria which shows marked bactericidal powers for gram-positive organisms, has received comparatively little attention by ophthalmologists. Heath<sup>9</sup> reports that he obtained the most favorable results in the treatment of epidemic keratoconjunctivitis with the local use of 30 mg. of tyrothricin per 100 cc. four to six times daily.

He also recommends its use in the treatment of pneumococcal conjunctivitis (except Friedlander's type), dendritic keratitis, and low-grade dacryocystitis. My experience with tyrothricin, though limited, has been disappointing.

In the field of anesthesia, many new local anesthetic agents have been produced since the introduction of cocaine.

Tetracaine (pontocaine) hydrochloride is a good representative of the newer group. The chief advantages of tetracaine are, it smarts very little when it is instilled in the eye, its action is rapid and prolonged, the pupil is not dilated, it does not influence the tension, nor is the accommodation affected. Tetracaine does not cause desiccation of the corneal epithelium nor devitalize the cornea. Patients are rarely sensitive to tetracaine but this possibility should be kept in mind.

All local anesthetic agents probably delay healing of the corneal epithelium to some extent but in a recent study by Gundersen and Lieberman<sup>10</sup> 0.5 per cent tetracaine hydrochloride was found to be one of the least toxic to the regenerating epithelium.

Although there have been many new local anesthetic agents produced for infiltration and block anesthesia, procaine hydrochloride (novocaine) is still generally conceded to be the anesthetic of choice for injection.

Pentothal sodium used intravenously for the production of general anesthesia in ophthalmology is becoming increasingly more popular. The rapid induction and prompt recovery with comparatively few undesirable complications, when skillfully used, make it an excellent anesthetic



for many eye operations that require general anesthesia. Pentothal sodium may be used for induction. It is compatible with other anesthetic agents and can be used in conjunction with them or to supplement local anesthesia.

As with all general anesthetics, there are definite contraindications, which experience with its administration have minimized. One contraindication is physiologic or mechanical interference with the respiratory function. The importance of the use of atropine in the preanesthetic medication should be emphasized. An experienced anesthetist is essential, and equipment should be at hand to administer oxygen by inhalation or by insufflation, if necessary. Careful postoperative observation by a competent person equipped to cope with serious apnea is advisable. Occasionally, venipuncture is difficult or not practical.

In a series of eye operations performed with pentothal sodium reported by Post and Robertson,<sup>11</sup> 23 per cent of the patients vomited. Falls,<sup>12</sup> in a series of 147 ophthalmic operations done with pentothal sodium, reported vomiting in over 17 per cent. Such a high incidence of vomiting would indicate that globe operations such as cataract extractions would be safer with local anesthesia.

As with the anesthetic agents, there have been many antiseptics produced in recent years. In choosing an antiseptic the principal consideration is the rapid destruction of the infective organism with a minimum of tissue damage. Furthermore, the antiseptics which have an injurious effect upon the natural defense processes, such as the leukocytes and lysozyme, should be avoided. Also of importance is the ability of the antiseptic to penetrate the tissues, so that it will reach the infective process in sufficient concentration to be of value.

Many excellent antiseptics are now available that fulfill the majority of these requirements. Aqueous solution of metaphen (4-nitro-anhydroxy-mercury-ortho-cresol), 1:2,500, is a good example of this group. The phenol coefficient is high, and it causes little tissue damage and practically no irritation when instilled in the conjunctival sac. For preoperative skin disinfection 1:200 tincture of metaphen or 1:1,000 tincture of merthiolate (sodium ethyl mercuri thiosalicylate) is preferred rather than tincture of iodine, not because tincture of iodine is inferior but because some of the newer antiseptic agents used in the eye are not compatible with tincture of iodine.

To combat infections at the present time, however, our thoughts turn at once to the sulfonamides and penicillin even though the latter is still out of reach of most ophthalmologists.

Two years ago, Thygeson and Stone<sup>13</sup> pre-

sented a paper before the Section on Ophthalmology on sulfonamide therapy of ocular infections. Therefore, little need be said in regard to the sulfonamides except to emphasize a few points concerning their use. It is generally agreed that the nonspecific use of the sulfonamides should be avoided. The selection of the drug, whenever possible, should be based upon a precise knowledge of the organism present and the sulfonamide compound chosen that has the greatest bacteriostatic effect on this particular organism.

Bellows<sup>14</sup> has reported that in the absence of normal epithelium the sulfonamide compounds not only injure the cornea but the regeneration of epithelium is greatly retarded. Therefore, the routine use of the sulfonamides locally for minor injuries of the cornea and as a postoperative medication is contraindicated, because it delays healing.

Since the penetrability of the sulfonamide compounds varies greatly, particularly in regard to the eye, it is essential to select the compound that penetrates the ocular tissues most readily in order to maintain a sufficient concentration of the drug in the affected part. Also of great importance is the use with the sulfonamides of wetting agents to reduce the surface tension. The disturbance of the corneal epithelium caused by local anesthetic agents, particularly cocaine, also allows the drug to penetrate more easily. Heat, both local and general, and massage as well as other measures to increase the penetrability and effectiveness of the drugs may be used.

In regard to the size of the dose, the consensus of opinion is that, in most instances, a large dose of the sulfonamides for a short period is preferable to a small dose over a long period. Inadequate concentrations of the drug not only may be ineffective in combating the infection, but may produce hypersensitization or a sulfonamide-fast organism. Frequent estimations of the blood level of the sulfonamides should be made, since it is essential to maintain an adequate concentration in the blood if the purpose of the treatment is to be accomplished.

In the treatment of glaucoma, prostigmine has been found to be a most useful addition to the list of miotics. Clarke<sup>15</sup> suggested its use with mecholyl; the mecholyl to stimulate the sphincter directly, and the prostigmine to inhibit esterase from destroying both the mecholyl and the normally produced acetylcholine. Alarming general reactions which occasionally occur with mecholyl discourage its use. However, prostigmine alone or with other miotics aids greatly in the treatment of both acute congestive and non-congestive glaucoma.

The pharmacologic action of prostigmine is

similar to that of physostigmine (eserine) but has a much stronger miotic action. Fewer patients become sensitive to prostigmine and it does not deteriorate as rapidly as physostigmine.

Along with the usual treatment of acute glaucoma, instillations of 5 per cent prostigmine every ten to fifteen minutes for four to six instillations usually reduces the intraocular pressure to within normal limits.

In noncongestive glaucoma where the fields, vision, and intraocular pressure are not controlled with pilocarpine, and operation is either contraindicated or postponed, prostigmine is of value. As with other miotics, the solution of prostigmine should be no stronger than is necessary to satisfactorily control the glaucoma. It may be used to supplement the action of pilocarpine or in the place of pilocarpine or physostigmine should the patient become sensitive to either. When the use of prostigmine is first begun, it may cause pain in the eyes and head which is generally relieved with an A S A compound tablet (acetylsalicylic acid, acetophenetidin, and caffeine). The pain rarely occurs after the second or third day of treatment. Occasionally, patients are sensitive to prostigmine, as they are to other drugs used in the eye.

Carbaminoylecholine chloride (doryl) is a synthetic choline derivative, similar to acetylcholine but it has a more prolonged action. According to Guyton,<sup>16</sup> it produces a miosis comparable to that of pilocarpine of the same strength. Since it does not penetrate the cornea well, O'Brien and Swan<sup>17</sup> recommended using it in a 0.03 per cent solution of zephiran chloride, which acts as a surface tension-reducing agent and thus increases the corneal permeability. Later Swan<sup>18</sup> reported that a suspension of carbaminoylecholine chloride in petrolatum penetrates the cornea more readily and its action is more rapid and effective than when used in aqueous solution or in a solution of zephiran chloride. Massage of the cornea through the lids further increases the absorption.

In the comparison of 1.5 per cent carbaminoylecholine chloride in 0.03 per cent zephiran chloride solution with 2 per cent pilocarpine nitrate solution, it was found that carbaminoylecholine produced slightly greater miosis and lasted approximately three times as long as that produced by pilocarpine.<sup>15</sup>

Therefore, less frequent instillations of carbaminoylecholine are necessary to control the glaucoma. It produces a hyperemia of the conjunctiva which may be quite marked at first. Pain in the eye and headache may also be noted following the initial administration, but, as with prostigmine, it only occurs during the first few days of treatment.

Often the intraocular pressure in acute con-

gestive glaucoma is not sufficiently reduced by miotics to permit an operation to be done safely. Various intravenous injections have been advocated to lower the intraocular pressure by osmosis. Hypertonic sodium chloride solution, dextrose, and sucrose have all been used but there are definite objections to their use. Hypertonic salt solution produces edema and is contraindicated in patients with cardiac and renal damage. The salt also enters the anterior chamber of the eye and causes inhibition of water absorption with a secondary rise of pressure, often higher than it was originally. Furthermore, if it is extravasated into the tissues, it produces a slough. Dextrose, like sodium chloride, is readily diffused in the ocular tissues and produces a secondary rise in pressure after an initial drop. Its use is limited to nondiabetic patients. Sucrose was later introduced, since it did not have many of the disadvantages of hypertonic salt solution and dextrose, but it has been discontinued because it produces renal damage.

Sorbitol has been reported by Bellows *et al.*,<sup>19</sup> as the best agent readily available that does not have these objectionable qualities. It is nontoxic, effective in moderate quantities, and is not contraindicated in persons with diabetes. In acute glaucoma with high intraocular pressure the intravenous injection of 50 cc to 100 cc of 50 per cent solution of sorbitol produces a marked decrease in the pressure. This may occur as early as two hours after the injection, but the maximum effect is reached in from twelve to twenty-four hours. The pressure may rise again if the injection is not repeated or an operation performed to control it.

The conclusion reached after this brief evaluation of newer drugs used in ophthalmology is that the method of administration is of paramount importance if the full effect of the drug is to be obtained.

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## Discussion

Dr. Albert C. Snell, *Rochester*—Dr. Atkinson has presented many practical suggestions on the proper use of some of the newer drugs. He has laid particular emphasis on methods of application which make their use more efficient. These methods relate to the use of buffer solutions and of "wetting" methods. I can add to this valuable paper only some of my personal experiences in the use of these drugs and in methods of application.

Dr. Atkinson leads one to believe that the compounding of the proper buffer for various ophthalmic solutions is a simple and easy matter. I find that this idea needs some modification. From inquiries of pharmacists I find that buffering is not simple and that only a small minority of the best pharmacists can be trusted properly to buffer solutions.

Therefore, if the ophthalmologist desires to have a properly buffered solution, it is wise for him to consult with the druggist and select a dependable one; most will not be bothered with buffering.

To point out the difficulties in buffering and to make clear the conception of the meaning of pH, I venture to add the following: If one can think of a scale of pH values as a scale running from 1 to 14, the center of which indicates a neutral solution, then 7 will be this neutral point. The pH values below the 7 indicate acidity, whereas the pH values above the 7 indicate alkalinity. Thus, if the pH of any solution is known, and one wishes to have the solution acid, or alkaline or neutral, it is possible to buffer the solution as desired following the steps mentioned by Dr. Atkinson.

Some of the difficulties of buffering can be understood when one realizes several factors:

1. How delicate the balance between acidity and alkalinity is. For this reason, in order to make the proper basic solutions, either the acid or the alkaline, the pharmacist must use at least 1,000 cc. of fluid, and some authors recommend 10,000 cc. Therefore, there is considerable waste if the pharmacist is not constantly compounding the buffered solutions.

2. The buffered solution is not altogether stable.

3. Another difficulty is encountered because sterile distilled water, when freshly made, has a pH of 7, which is neutral, but it rapidly becomes acid, and the pH may drop to 5.7. This is caused by absorption of carbon dioxide. Therefore, freshly made solutions are very important, and under all circumstances the pharmacist should repeatedly test the pH by some standard method. The colorimetric method is practical and satisfactory, and stock solutions must be constantly retested if the desired pH is to be maintained. All this adds to the expense of a buffered solution but is often worth while in some solutions. For example, the use of a buffered solution having a pH of 7 to 8 is most valuable in applying contact lenses, and with the drugs mentioned by Dr. Atkinson.

In prescribing a buffered solution one should designate the pH desired. If neutral, state a pH of 7.4, which is the pH of normal tears. If one desires the solution to be slightly acid, designate that the solu-

tion should be pH 6; if alkaline, the pH should be 7.5 to 8.

The most efficient ophthalmic solution is not always a neutral solution, as some drugs act better in an acid pH, others in an alkaline, and still others require a specific pH. But in general, the least irritating solutions are those which have the same pH as tears. However, the pH of tears differs with the individual. Since some bacteria cannot live in an acid medium, while others cannot live in an alkaline medium, a pH should be prescribed which is known to be most effective. For example, the pneumococcus cannot live in a medium with a pH of less than 7, and therefore should be treated with an acid solution. For streptococcus infection an alkaline buffered solution is indicated, but an alkaline solution is contraindicated in the treatment of gonococcus infection, where the pH should be below 5. For the treatment of vernal conjunctivitis the buffer should have a pH of 8.4.

In reference to some of the newer drugs mentioned by Dr. Atkinson, I wish to remark that my experience with pentothal sodium has been most satisfactory. In the last twenty enucleations we have had no cases of vomiting and practically no distressing symptoms. However, this anesthetic has been given only to adults. We are informed that it is less satisfactory with children, with whom there is additional risk.

I have had no experience with the use of aerosol and I would like to ask Dr. Atkinson if he advises the use of this drug with all antiseptics.

For the treatment of glaucoma I used doryl in a limited number of cases but found it ineffective. Furthermore, a government agent confiscated what I had left. As an adjunct to other forms of treatment of glaucoma, I have had very good results with 5 per cent prostigmine bromide. This has been especially effective when the tension could not be entirely controlled by operation, in senile patients, and in some cases of glaucoma following cataract extraction. In these types of cases I have found that the instillation of prostigmine fifteen minutes prior to the instillation of pilocarpine is most effective.

Among the sulfa drugs I have found sulfamerazine to be most practical, when the sulfa drug is to be administered orally. With this drug an efficient blood level can be maintained with half of the indicated dose for sulfathiazole.

Dr. Ludwig Sallmann, *New York City*—First I would like to thank Dr. Atkinson for the generous credit he has given the experimental work done in the Knapp Memorial Laboratory and also for the chance to read his excellent paper before its presentation. This has enabled me to check some figures pertinent to the problem of wetting agents and iontophoresis and to conduct a series of experiments comparing the effectiveness of the two methods.

Bellows and Gutman stated that in the use of wetting agents a simple method is at hand for increasing the concentration of sulfonamide in the cornea and aqueous humor, making the more complicated method of iontophoresis unnecessary. In my opinion, evidence presented so far does not seem to fully

justify this statement. About 40 mg per cent of sulfadiazine is found in the aqueous humor one hour after a single iontophoretic treatment. Bellows and Gutman report an average of 4.4 mg per cent of the same compound in the aqueous humor after an hour's application of a paste containing the sulfonamide and the wetting agent aerosol OS. The same is true, although to a lesser degree, of comparative figures with sulfapyridine and sulfathiazole. In a new series of experiments, various amounts of aerosol OS were added to a 5 per cent solution of sodium sulfacetamide and the concentrations of the sulfadiazine in the aqueous humor one hour after a five-minute bath with these solutions were compared to those found after iontophoresis. A great increase in the permeability of the cornea resulted from the use of the wetting agent in a 0.1 per cent concentration but also that there was considerable damage to the cornea and irritation to the anterior segment of the eye lasting for several days. When only a 0.02 per cent aerosol solution was used, damage was apparently avoided but the amount of the sulfonamide reaching the anterior chamber was moderate. The simple instillation of a local anesthetic, namely 0.1 per cent nupercaine hydrochloride, was considerably more effective in securing a larger amount of the sulfacetamide in the aqueous. When iontophoresis was used with the same local anesthetic, the concentration of the sulfonamide in the aqueous

went up to more than 40 mg per cent, about thirty times higher than in control eyes treated with corneal bath under general anesthesia.

At the present time, therefore, it seems very unlikely that the permeability of the cornea can be greatly increased by the use of wetting agents without causing considerable damage. The principal advantage of this new technique would be in the maintenance of an increased but moderate drug level in the structures of the anterior segment of the globe, provided repeated applications could be given daily. However, experiments on chronic toxicity of the wetting agents have not been reported as yet. They appear indispensable in view of the irritation seen in rabbits' eyes after the frequent use of penicillin ointments and solutions containing wetting agents of the aerosol group when continued for three hours. In conclusion, more experimental work is necessary to establish a safe and effective dosage of these surface detergents in ocular therapy.

In regard to penicillin, I would like to make a brief statement. Experimental work carried on in the last half year has revealed that direct injection of small amounts of purified penicillin into the anterior chamber, lens, or vitreous seems to constitute a reasonably safe therapeutic procedure to fight acute exogenous infections of the eye. This observation is of foremost importance for the infective foci which cannot be reached by the drug in other ways.

#### HOSPITALIZATION FOR INFECTIOUS TUBERCULOSIS

The public health and social benefits resulting from the hospitalization of infectious cases of tuberculosis are not sufficiently recognized. These social benefits need greater emphasis and the

question of the individual's ability to pay should be subordinated to the more fundamental consideration of the public welfare.—Robert E. Plunkett, M.D., *N.Y. State Dept. of Health Annual Report, 1942*

#### M.D. License Plates

Physicians desirous of having M.D. license plates reassigned to them for 1945 are advised to make out application blanks at once on forms now available at the Motor Vehicle Department offices and other places throughout the State.

The application blank should be accompanied by a check and also contain a note on the physician's letterhead requesting the M.D. license plates because the holder of same is a practicing physician.

License plates for 1945 will be available shortly after December 1, 1944.

Please give this your prompt attention.

PETER IRVING, M.D., *Secretary*

# THE MANAGEMENT OF OBESITY

LOUIS PELNER, M.D., Brooklyn, New York

**D**URING the past year, a reducing fad popularly called the "technicolor" method has become very popular with both physicians and patients in this part of the country. The word "technicolor" refers to the three differently colored tablets that are dispensed to the patient by the physician, one to be taken before breakfast, one before lunch, and one at 4:00 o'clock in the afternoon. Each tablet contains approximately the following constituents: 5 mg. of amphetamine or benzedrine sulfate,  $\frac{1}{320}$  Gm. of atropine sulfate, and 1 grain of thyroid extract. In addition, the morning tablet contains a small dose of aloes, while the evening tablet contains phenobarbital. Often phenomenal weight loss is said to occur during the first two weeks of therapy. However, soon afterward the weight loss ceases because the patient has become refractory to the medication, and once again he becomes disillusioned.

It is the purpose of this paper to show the inherent faults in this shotgun prescription, and to show how the physician can utilize the principle of appetite depression to safely reduce those overweight patients who require it. For the appetite depression, both benzedrine sulfate and atropine sulfate are used in slowly ascending doses, changes being made about every two weeks. In this manner patients who become relatively refractory to certain amounts of this drug can keep on losing weight.

A detailed report with graphs and a discussion of the mode of action of benzedrine sulfate and atropine sulfate is given elsewhere.<sup>1</sup> Here it will suffice to discuss the principles and dosage underlying the appetite-control method of the treatment of obesity.

The most common and important type of obesity is without doubt caused by overindulgence in food. The thyroid gland is seldom involved as a cause of obesity. In hypothyroidism, fat is not greatly increased in the patient. Instead there is a peculiar form of fluid present, as is evidenced by the term "myxedema." There are, however, fat deposits on the neck and shoulder, but these are not extensive. It is often stated that the basal metabolic rate in obese patients is low, and therefore they have hypothyroidism. Greenhill<sup>2</sup> points out that the basal metabolic rate as ordinarily determined is the total basal metabolism, and takes

into consideration actively oxidizing tissues as well as the inactive tissues, such as fat deposits. Since in obese individuals these inert deposits predominate, they weight the basal metabolism in a negative direction. If we should calculate the basal metabolism on the ideal weight basis, most obese individuals would have high metabolic rates. This author points out the futility of giving thyroid to most of these patients, when their tissues are already burning at a high rate. The shotgun "technicolor" method of weight reduction does not take into consideration this important point.

In many cases, at least, overeating may be due to a psychic disturbance in which the individual is unprepared to meet the social demands of everyday life. Thus overeating is indulged in, and obesity results. Bruch<sup>3</sup> has done a great deal of work on this subject in children. She has found that many overweight children are unhappy and maladjusted. Glandular treatment under these conditions is not only useless, but harmful. The treatment is psychotherapy and diet. Greenhill<sup>2</sup> goes into the social, economic, and psychic factors that cause people to overeat. An individual may have grown up in an environment where a great deal of food is eaten. He thus continues this practice of gluttony in later life, and the consequence is overweight. The overeating may be an escape mechanism for a mental conflict. There is also a group of people who lack interests in life and obtain pleasure in overeating. It is often impossible to appease their appetites because they are unable to satiate their sensory desires (anhedonism). Another form of mental conflict, considered important in females, is that obesity can be an escape from competition for masculine attention. In this condition overeating is an excuse. It can thus be seen that in addition to any treatment outlined, psychotherapy, especially of the family-physician type, must also be used in conjunction with any form of treatment. It can also be seen why such divergent reports appear in the literature on any form of treatment. It is impossible to formulate statistical results on these patients because of the psychic elements involved, and because of the varying abilities of different investigators in performing psychotherapeutic treatment.

The first and foremost principle in the treatment of obesity is the placing of the patient on a low calorie diet (e.g., 1,000 calories). If this can be adhered to, no other treatment is required (See Chart 1.)<sup>4</sup>

<sup>1</sup>Associate attending physician, Greenpoint Hospital; assistant attending physician, Long Island College Hospital and Brooklyn Cancer Hospital; gastroscopist, Beth Moses Hospital, Brooklyn.

CHART I.—ILLUSTRATIVE DIET LIST

Your total calories should not exceed for each day. Divide them as directed below Do not eat between meals. Some exercise must go with this diet daily

## BREAKFAST

You may select from below	calories	Calories
Calories		
25		50
20		125
45		70
50		35
75	1 teaspoonful sugar	25
75	1 plain cracker	20
75	Tea or coffee with no sugar	0

## LUNCH

You may select from below	calories	Calories
Calories		
20		25
20		25
15		25
15		25
15		20
30		40
50		35
100		55
65		40
75	Tea or coffee with no sugar	0

## DINNER

You may select from below	calories	Calories
Calories		
75		80
85		60
90		75
85	1 egg	75
85	1 piece haddock (2 × 3 inches)	35
85	6 large oysters	40
95	1 piece brook trout	45
75	Tea or coffee with no sugar	0

Bread, beverages, fruit, etc., from the above list, may be added to any meal provided the total calories do not exceed the amount prescribed.

The following foods must be avoided. Nuts, olives, olive oil, chocolate and cocoa, gravies, cream soups, sauces, ice cream, candy, pastry, macaroni, potatoes, alcoholic beverages, canned fruits in syrup, and highly spiced and salted foods. Do not use sugar unless you absolutely have to.

Four glasses of water each day are allowed. Be sure that your daily menus include a fresh fruit, either meat, fish, or egg, milk, and three vegetables.

The calories may be divided as follows: 150 for breakfast, 250 for lunch, and 600 for dinner. This division may be varied according to the patient's desires.

It has been found by experience that merely admonishing a patient to adhere to a low calorie diet has been largely unsuccessful. This has been true even though the patient may be sincere in his attempt to lose weight, because adherence to a low calorie diet alone will often cause intense weakness. This may be present even though vitamin and iron medication is indicated.

For this reason it is necessary to employ means that will curtail the appetite and at the same time would give the patient a feeling of well-being that will encourage him to continue the dietary treatment. The appetite depressants used in this study were benzedrine sulfate<sup>6,7</sup> (racemic amphetamine) and atropine.<sup>8,9</sup> The dosage of benzedrine was usually started at 5 mg. three times a day, and increased slowly at two-week intervals to about 10 mg. three times a day. Occasional cases required 12 mg. three times a

day. This substance was combined with atropine, in doses starting at  $\frac{1}{100}$  of a grain and gradually increased to  $\frac{1}{200}$  grain. These drugs were given together in a capsule one hour before each meal. A tolerance was soon developed for each of these drugs, so that the same dose would no longer cause a reduction in appetite. It was therefore necessary to increase the dosage of either or both of them, about every two weeks. Thyroid was included if the basal metabolic rate was below minus 5 per cent. The dose of thyroid, which, when used, was also included in the same capsule, ranged from  $\frac{1}{8}$  of a grain to 1 grain three times a day. The appetite-depressing medication was found to work best when taken about one hour before meals. Most women did not lose weight around their menstrual periods. This is a well-known concept and is undoubtedly due to retention of water at that time. Under such conditions aminophylline in 3-grain tablets was given three times a day, to tide over the period of fluid retention. This often caused a satisfactory reduction in weight. Occasionally mercupurin or mercuhydrin, a new

mercurial, was used if aminophylline was found to be ineffective.

It was invariably found that even though weight loss had been satisfactory for several months, a point was reached when the patient became refractory to both benzedrine and atropine. This is a phenomenon that has been noted with most patients receiving these autonomic drugs. Under these conditions, it was necessary to discontinue the medication. In order for the subject not to increase his weight again, it was decided to have the patient take a gel-producing substance, such as metamucil, 1 teaspoonful in water or orange juice immediately before eating.<sup>10</sup> Although this did not reduce the appetite sufficiently to cause a loss of weight, except occasionally, it did tide the patient over a period of refractiveness to the appetite-control drugs. After a period of two weeks the autonomic drugs could be resumed again, even in smaller amounts, with adequate control of appetite.

As experience was gained with the use of these drugs, it was found that only rarely was a rise in blood pressure or pulse rate seen. It is thus obvious why opinion on the value of these drugs varies so much, and why statistical analysis does not give an accurate picture. Each patient requires an individual dosage of each drug, and also requires an increase in dosage at a different rate. Some psychotherapy is also required in the case of each patient, sometimes during the treatment, and certainly after the treatment is discontinued. New eating habits must be established if a patient is not to regain his lost weight. All the female patients require some form of diuretic therapy during and often following the menstrual period. All the patients develop a refractoriness to the therapy, and therefore require a short period of rest. We have used the gel treatment in this interval. This same substance is usually required to be given for some period after satisfactory weight loss has

been reached, and until new eating habits have been thoroughly established. If this does not occur, the whole treatment has been wasted. Because of the relaxing effect of the drugs on intestinal musculature, constipation usually resulted and a mild laxative was advised.

The patient must be put on vitamin-mineral supplements as soon as therapy is started, because his dietary intake will often be erratic. In practice, the patient is put on at least one potent panvitamin capsule, along with two ferrous sulfate tablets in 3 to 5 grain dosage. It was found that these preparations are best given at night, so as not to confuse the patient.

Occasional reactions may occur, including headache, restlessness, insomnia, irritability, palpitation, and a disturbance of the bowel habit. However, it is necessary to state that these reactions are exceedingly rare, and are merely mentioned to call attention to their rarity.

Exercise is of benefit in the management of the obese patient. Exercise alone is usually not sufficient to cause an adequate loss of weight, and is a much harder way of reducing than by limitation of food intake through appetite depression.<sup>11</sup>

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## RUSSIAN MEDICAL LITERATURE

Since the intimate association of the United States with Russia during World War II, anything pertaining to that great nation is of interest to the citizens of our country. Although modern medicine has been well established in Russia, we know little of its physicians or the work which they are carrying on. Information on these medical matters is offered to the physicians of this country through the bimonthly *American Review of Soviet Medicine*, published in New York. The contents of this journal comprise abstracts and reviews of Russian books and medical journals which aim to give English translations of their essential features. The

published numbers include papers on some conditions familiar to practitioners of our country, as well as interesting descriptions of diseases with which we have little familiarity, all of which offers valuable information.

The editor, Dr. Henry E. Sigerist, solicits the services of anyone familiar with the Russian language who is willing to serve in translating important medical publications for inclusion in this journal.

This will be worth-while service capable of benefiting any physician who has access to this journal.—*Northwest Medicine*, July, 1944

# THE ROLE OF DEVELOPMENTAL DIAGNOSIS IN CLINICAL MEDICINE

ARNOLD GESELL, M D , New Haven, Connecticut

**D**EVELOPMENT as well as disease falls within the scope of clinical medicine. For this reason the more advanced hospitals of the postwar world will be equipped with facilities for the diagnosis of the developmental status of infants and young children. With such facilities, we can come nearer doing justice to that large group of infants who because of intrinsic or acquired impediments, are unable to develop normally. This includes a vast array of conditions: simple amentias, aplasias, and malformations, degenerative processes, birth injuries and other traumas, toxemia, infections and toxic lesions, endocrine dysfunctions, sensorimotor handicaps, and severe environmental shocks and stresses.

## Behavior Patterns Are Symptoms

A developmental diagnosis is a diagnosis of the maturity of a growing organism. What is the most important symptom of maturity? Behavior. A man may be as old as his arteries, a baby is as old as his behavior. There is no more fundamental, no more comprehensive, no more significant criterion of developmental maturity. Height and weight tell us something. Metabolism ratings, x-ray photographs and biochemical determinations tell us this and that, but nothing sums up the developmental status of a child so completely as the behavior picture, because the behavior picture is a faithful image of the integrity and the organization of the child's nervous system. Of all his organ systems, the central nervous system is supreme. It determines his capacity to adapt to the world in which he lives.

The status of this nervous system should be brought more systematically within the scope of clinical pediatrics. Pediatrics is a form of general medicine. As such, it is concerned with all the life functions of the organism, including the basic function of development. And development can be fully appraised only in terms of the central nervous system and its outward tokens.

What are these outward tokens? They are patterns of behavior. As a technique, developmental diagnosis is a clinical developmental neurology which elicits patterns of behavior.

The ordinary procedures of clinical neurology are best adapted to frank neuropathologic conditions, but they are not very serviceable for observing the neuromotor system of an infant or

young child, and for discovering the early indications of developmental defects and deviations. We need a technique which will not arouse the protests and resistances of the infant, but which will invite him to display spontaneously and naturally the basic condition of his behavior equipment, namely, his neuromotor system.

## Diagnostic Procedures

Now, this is the logic which is behind the system of developmental diagnosis which we have organized in our Clinic at Yale University. The methodology is simple. The materials are simple (Fig. 1). We believe that in this very simplicity lies the usefulness of the technique. We use no artificial devices which are likely to disturb the equanimity of the infant. On the contrary, we take pains to preserve his contentment, to make him feel at home, to encourage his reactivity to the examination situation.

If he is a young infant, we begin our observations by simply placing him on his back. He inevitably rewards us with a behavior pattern. He assumes a postural attitude which may or may not be characteristic of his chronologic age. We observe his natural, spontaneous postural behavior. What postural attitudes do his eyes assume? What does he do with his head? His hands? His arms? His legs? Does he follow a ring dangled before him? Can he move his head to the midline? Up to the age of 12 weeks, if he is normal, he characteristically displays a tonic neck reflex attitude. Should he display this attitude at a more advanced age—say at 40 weeks—we would, in this one observation, have a neuromotor symptom which has great importance from the standpoint of diagnosis and prognosis. In the short space of fifteen minutes we can observe a wide array of behaviors—motor, adaptive, language, and personal social patterns of behavior.

When the infant is posturally mature enough, he can be placed in a supportive chair confronting a table top which spans the crib (Fig. 2). On this table-top we place test objects in accordance with standardized procedures which evoke behavior responses that can be appraised in terms of clinical norms. The test object may be a cube, an enamel cup, a ring with a string attached, or a tiny pellet.

## Diagnostic Appraisal

We are not interested in success and failure as such in these test situations. We are interested in



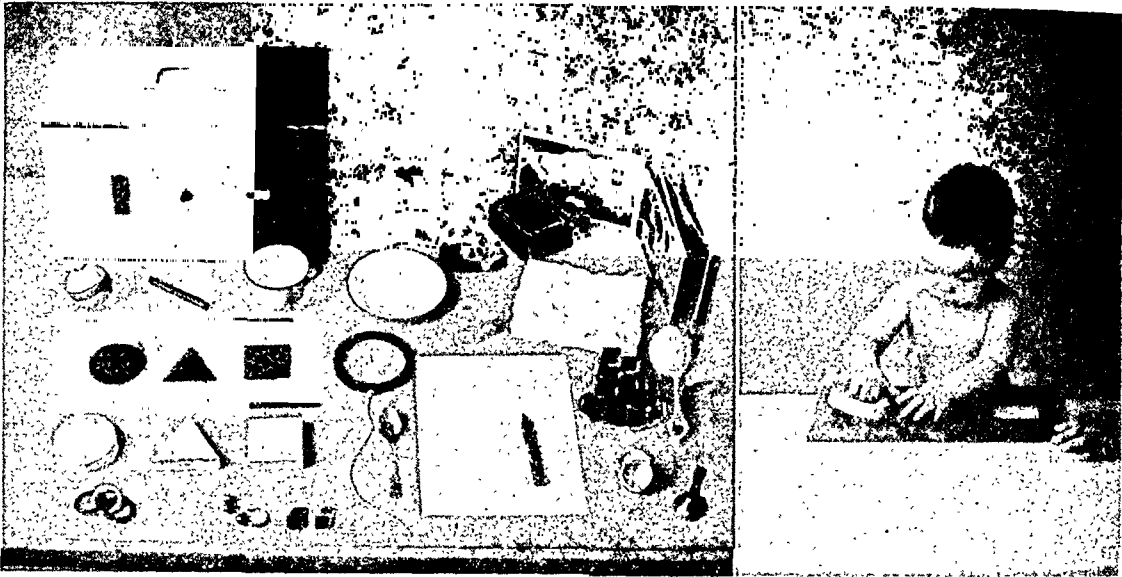


FIG. 1. Developmental test materials.

the shape of the patterns which are evoked. We wish to know how these shapes conform to normal traits, and whether the observed behavior pattern fits into a developmental gradient. Every pattern is an index of a degree and a kind of maturity. An accurate diagnosis depends upon a judicious weighing of the numerous indicators of maturity which the infant spreads before us with prodigality as he addresses himself to the test objects.

Inasmuch as we are not interested in plus and minus ratings or success and failure scores, it is needless to say that we have no interest in calculating an arithmetic intelligence quotient. Infant

I.Q.'s are all but meaningless. They have the appearance of quantitative precision because they are derived by dividing a numerator by a denominator. But an uninterpreted I.Q. may be extremely misleading because of defects in the examiner, in the infant, in the examination procedure, and in the measuring scale applied. The I.Q. has been seriously misused in the classification of children of school age. The dangers of misuse in the first two years of life are so grave that the pediatrician will be well advised to beware of the simplification of any I.Q.

The objective of developmental diagnosis is the appraisal and interpretation of developmental assets and liabilities. Such interpretations can neither be summed up by nor posited on a numerical I.Q. Developmental diagnosis, therefore, should not be confused with a psychometric type of mental testing. From the standpoint of clinical medicine, development is a complex process which requires critical and considered analysis which takes into account all the attendant and historical medical factors. This is equally true whether the diagnosis is concerned with relatively normal children or seriously defective children or problematic children with complex conditions that demand refined differential diagnosis. Normality presents its own distinctive clinical problems.

In this biologic sense, development as well as disease falls within the scope of clinical medicine. This is a fundamental thesis which applies with peculiar force to pediatrics. The pediatrician is charged with the responsibility of promoting optimal child development and recognizing all the factors which interfere with such develop-

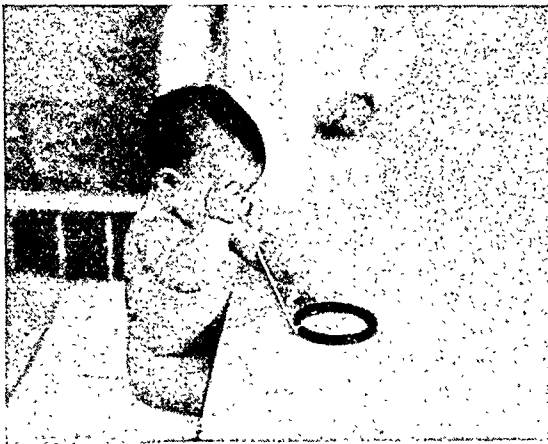


FIG. 2. An infant behavior test. A ring and string have been placed on the table top of the clinical crib to elicit adaptive behavior.



FIG 3 A developmental examination of a preschool child, showing one-way vision screen arrangement

ment. He places his first and foremost reliance upon nutrition. But this is only the beginning of a broader supervision which includes the total economy of growth and development. Pediatrics, we repeat, is a form of general medicine, and as such it is also psychosomatic medicine.

Now how can this new type of developmental diagnosis, this type of supervisory medicine and pediatrics, be put into operation? Like any other branch of clinical medicine, developmental diagnosis may be undertaken at various levels of skill and thoroughness. As a clinical specialty, developmental pediatrics demands at least a year

internship in

At a more ordinary level of application, developmental diagnosis depends chiefly upon a working familiarity with a few simple test procedures, plus natural aptitude and clinical insight into the symptomatology of behavior traits. With a little systematic interest, technical skill is readily acquired.

There are two major fields of application: (1) routine, and (2) consultative.

#### Routine Applications

The clinical protection of child-development demands routine regard for behavior symptoms

in private practice, in infant welfare examinations, in child-health supervision, in children's hospitals, and in all child care agencies charged with administrative responsibilities. At the lowest minimum, there should be a behavior inventory which will disclose the most serious developmental defects and deviations. Such an inventory will not have diagnostic conclusiveness, but it will have a prediagnostic screening value, and may become a useful part of the child's record. A screening type of behavior survey by inventory and developmental examination is destined to become a standard feature of child protection, both in private practice and in child-welfare administration. How else can we do justice to children who are not developing normally, who are temporarily wards of hospitals or permanent wards of the community?

#### Referrals for Intensive Diagnosis

Every sizable community already needs specialized facilities for the diagnostic study of the more complex forms of maldevelopment, the outpatient division of a hospital is the logical place for such facilities. The developmental appraisal should be not a by-product but a separate undertaking, using all available evidence, but directed to a careful analysis of behavior

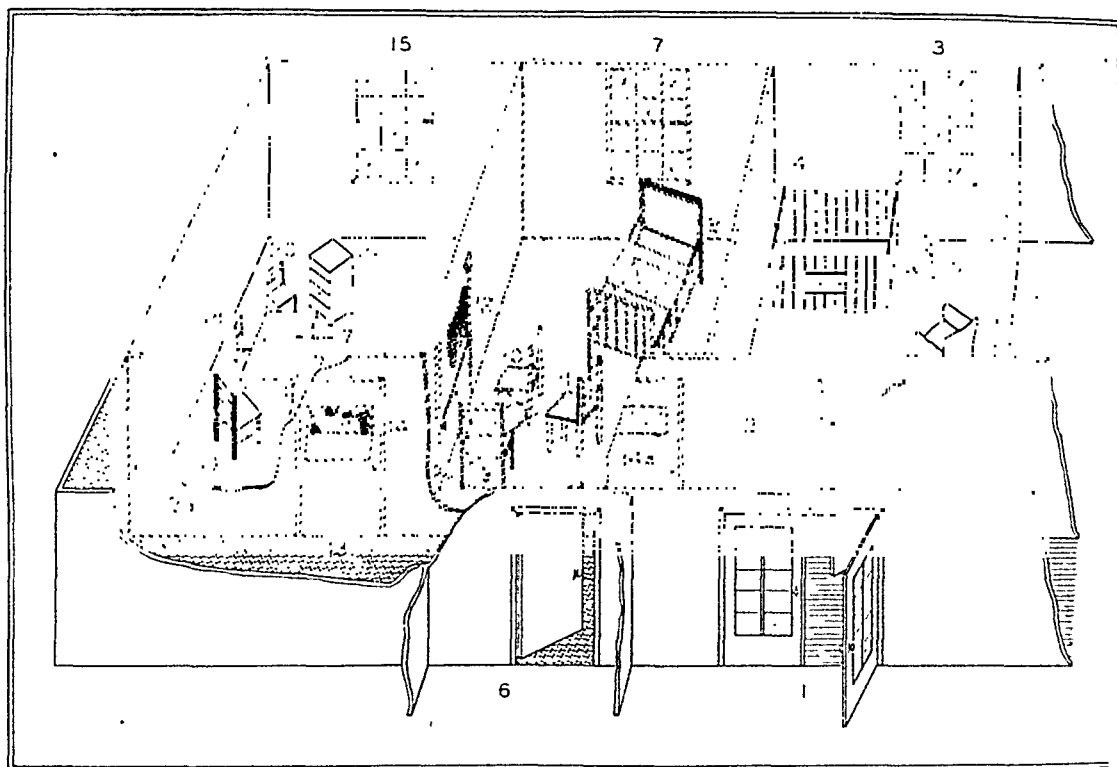


FIG. 4. A suite for the developmental examination of infants and preschool children. A function description of the arrangements follows:

Assume a child of preschool age, accompanied by a nurse or mother. The child enters at (1), pass through the hallway (2) which connects with the reception room (3) and also with the bathroom at (6). The reception room is furnished with adult chairs and a play pen (4) and child's chair (5). The observation room (7) has been partially darkened by drawing the shade at the window. The recorder takes static in the chair equipped with writing arm (9). Observers can be seated nearby, behind the one-way-vision screen window (12) which communicates with the examination room (15), entered by the door at (13) also equipped with one-way-vision window (14). The examination room is equipped with an examination table (16) showing the picture book (17) and child's chair (18) in position. The mother sits at the right (19), the examiner at the left (20), with direct access to the examining cabinet (21).

If the child is of infant age, the same facilities are used in a slightly different manner. Room 7 becomes the examining room and room 15 the observer's and recorder's room. The one-way-vision screen window in the communicating door (12) operates equally well in the reverse direction. The examining crib is moved to a favorable position.

status. This means a separate locus, special equipment, and trained personnel on a par with electroencephalography, ophthalmology, radiology, or any other diagnostic department. The arrangements must be planned to insure optimal responses of the infant and the young child. Such arrangements are indispensable for the systematic follow-up supervision and parent guidance so seriously needed in all cases of maldevelopment.

A permanent diagnostic department will also become a natural center for demonstration, teaching, and intern training. It alone can establish the high standards of diagnosis which are necessary as a rampart against a superficial form of I. Q. psychology. The diagnosis of development is psychosomatic medicine. So long

as pediatrics remains a generalized form of medicine, it must bring the central nervous system squarely within its scope. It can do so only through a system of developmental diagnosis which appraises the maturity and the organization of the infant's behavior.

That is the role of developmental diagnosis in clinical medicine.

### Supplement

Slides and cinema were shown to illustrate the methods of developmental diagnosis, particularly as applied to infants. A film entitled "Developmental Neurology and Developmental Diagnosis" was demonstrated. This film depicts normal neuromotor patterns at 4, 16, 28, 40, and 52 weeks. Abnormal neuromotor patterns are comparatively delineated as follows: spastic paraplegia (age, 32 weeks); minima

cerebral injury (age 36 weeks), mild athetosis (age, 40 weeks), minimal cerebral injury (age, 44 weeks), minimal cerebral injury (age, 48 weeks), mild athetosis (age, 52 weeks) severe athetosis (age, 56 weeks), minimal cerebral injury (age 56 weeks), cerebellar aplasia (age, 2 years), mild athetosis (age, 2½ years)

A developmental examination is a practical method of appraising the competence of the neuromotor system. The film shows a few selected normal neuromotor patterns at salient ages to indicate their progression and development. Series of selected clinical cases delineate varying degrees of neurologic impairment. Although gross defects are represented in the film, the emphasis is on manifestations of minimal cerebral injury which often lead to an erroneous diagnosis of mental defect which can be best detected and interpreted by methods of developmental diagnosis.

The practicability of incorporating these methods into hospital organization is suggested.

The accompanying illustrations indicate the materials, the examination arrangement, and diagnostic procedures used. Figure 1 shows the test materials used in the behavior examination. Figure 2 shows an infant behavior test to elicit adaptive behavior. Figure 3 illustrates the developmental examination of preschool child with an arrangement for one way vision observation. Figure 4 diagrams a suite for the developmental examination of infants and preschool children.

The diagnostic procedures and clinical applications are described in detail in Gesell, Arnold, and Amatruda Catherine S. *Developmental Diagnosis Normal and Abnormal Child Development*. New York, Paul B Hoeber Inc, 1941 page 447.

## Discussion

Dr Harry Bakwin, New York City—For many years now the principal function of the pediatrician in America has been the care of the well child. Trying to keep children well and detecting minor deviations from optimal health have not been simple tasks. Perhaps the most difficult part of the job has been the differentiation between what is normal and what is abnormal.

As the function of the pediatrician broadens, as pediatrics takes upon itself the task of guiding the child in his mental, emotional, and motor attributes as well as in his physical traits, there arises a corresponding need for information in these fields. We must know more than the few crude facts about when the baby sits without support, when he walks alone when he says mama and papa etc. If we are to make judgments about the psychologic status of children we shall not only have to acquire a fresh viewpoint toward child care but we shall need as well an entirely new set of developmental criteria for judging the integrity of the nervous system. It is true that pediatricians have observed many of the things that Dr Gesell and his group have pointed out, but we have not been conscious of their significance and we have not been able to relate them accurately.

Take, for example, Dr Gesell's observations on

the behavior of the 4 week-old child. We have not been in the habit of noting the visual activity at this age, how the baby begins to fix on objects and show some interest in them, how his general body movements diminish momentarily when some interesting stimulus meets his eye. This is only one of innumerable observations which Dr Gesell has made and which has clinical value in assessing the mental and motor status of the infant.

In the observations on the behavior of children, some of which have been demonstrated to us today, a new and broader attitude toward the examination of children is implied. The pediatrician, no longer limiting his examination to the "physical examination," now has available to him a mass of data to which he may refer in order to assess certain aspects of the developmental status of his patient. And these data are as objective as clear cut as the findings with the stethoscope, the reflex hammer, and the percussion finger.

Especially valuable are the studies of Dr Gesell and his group on the baby as a whole—the observation of all the activities of the baby over the entire twenty-four hour period. These observations on the self regulated baby are as revealing, in a way, as were the early studies of disease uninfluenced by therapy. You will recall that for many years—indeed, up to about 100 years ago—recovery from many diseases, for example, typhoid fever and pneumonia, was looked upon as the result of therapy and not as the natural course of the disease. In a similar way we, too, have tended to look upon the schedules which we more or less arbitrarily imposed on children as the proper ones. After all, children thrived on them, thanks to their adjustability and their ability to "take it." We failed to see that the optimal schedule is that which the developmental status imposes on the child, a fundamental concept for which pediatrics owes a great debt to Dr Gesell. Using the unfolding of the developmental process as the guiding principle determining the handling of the child, rather than a plan based on ancient ideas and carried on by tradition reinforced by false rationalization has revolutionized the whole attitude toward child care. It is hardly necessary to point out to this group that a complete change in pediatric

so much to foster overanxiety in the parents and revolt in the children has been replaced by a flexibility and an individual adaptability which we trust will lead to happier parenthood and happier childhood.

It is a pleasure to have this opportunity to pay tribute to Dr Gesell and his able group of coworkers for their fundamental contributions to the theory and practice of pediatrics. Dr Gesell has provided us with a set of principles which serve as the ground work on which our ideas of modern child care are built, he has presented data to prove his thesis, and, with infinite patience and extraordinary tenacity of purpose, he has accumulated a mass of data ready for clinical application.

Pediatric practice needs to catch up with Dr Gesell.

# NUTRITIONAL IMPROVEMENT OF CHILD MENTALITY

I. NEWTON KUGELMASS, M.D., Ph.D., Sc.D., LOUISE E. POUILL, Ph.D., and  
EMMA L. SAMUEL, M.A., New York City

MENTAL energy is a product of two factors—capacity and intensity; one is determined by heritage and maintained by essential nutrients, especially proteins, lipids, water, and anions, while the other factor depends on immediate availability of dextrose, oxygen, vitamins, and cations. Metabolic disorders affecting the capacity factor or brain structure tend to produce irreversible anatomic lesions, while nutritional disorders affecting cerebral function tend to produce reversible biochemical lesions. The role of some essential nutrients has been evaluated in the mental activity of experimental animals but the applicability of this knowledge to children is a moot question. Since multiple nutritional deficiency predominates, the pertinent problem is to determine the effect of malnutrition on retarding mental function. Despite the difficulty of evaluating the nutritional status of children at various ages and the task of excluding underlying diseases affecting mental growth, we have, nevertheless, been able to study the effects of nutritional improvement on child mentality in 182 children from 2 to 9 years of age, half of them institutionalized at the New York City Children's Hospital and the Fifth Avenue Hospital and the other half outpatients at the Heckscher Institute, Bailey Hall, and the senior author's office.

Group I included 41 mentally retarded and 50 normal children, malnourished at the time of the first mental test and well nourished at the time of the second test. Group II included 41 retarded and 50 normal children, well nourished at the time of the first test and still well nourished at the time of the second test. Each group was equated for chronologic age, I. Q., and interval between Kuhlmann-Binet or Stanford-Binet tests. The data in Tables 1, 2, and 3 reveal an average rise of 10 points for retarded and 18 points for normal children of Group I in contrast with an average of no change for the retarded and a  $-0.9$  change for the normal in Group II. The greater variability shown by higher standard deviation of I. Q. in Group I in comparison with Group II is probably due to the initial variations in nutrient deficiency and individual responses to nutritional therapy. The significance of this difference in I. Q. change in favor of the malnourished group is 2.43, indicating that chances are 99.2 in 100 that the difference is greater than zero.

There is a significant correlation between the age at the time of the first test and the I. Q. rise.

A correlation of  $-0.56$  is a clear indication that the younger the malnourished child when nutritional therapy is instituted, the greater the chance of improvement in mental function. Indeed, the sharp decline in average I. Q. rise for the malnourished group after the age of 4 years suggests that irreparable damage is to be expected in older children. Flexibility of I. Q. change during the first four years of life bespeaks reversibility in mental development, while relative constancy in I. Q. change in older children bespeaks irreversibility in mental development following prolonged malnutrition. The slightly positive correlation between the length of the interval and the I. Q. rise in the malnourished group as compared with the zero correlation of the well-nourished group suggests that as long as two years may be necessary to bring about the average gain in I. Q. following nutritional therapy.

## Summary

1. The effect of nutritional improvement on child mentality has been determined in 182 children, 2 to 9 years of age, half institutionalized and half outpatients, for a period of fourteen years.

2. The group of children malnourished at the time of the first mental test and well nourished at the time of the second test showed a rise of 10 points for the retarded and a rise of 18 points

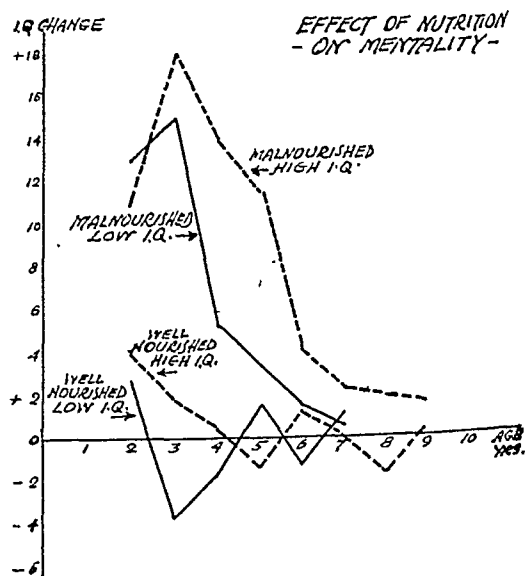


FIG. 1. Effect of nutrition on mentality.

TABLE 1.—EFFECT OF NUTRITION ON MENTALITY

	Malnourished Groups				Normal	
	Range	41 Retarded	Average	Range	50	Average
Age	2-8 years	3 years 10 months		2-10 years		4 years 8 months
I. Q.	20-90	45		95-145		110
Interval	1-7 years	3 1/2 years		1-3 1/2 years		2 years
I. Q. change	-8 to +44	+10		-12 to +55		+18

	Well-Nourished Groups				Normal	
	Range	41 Retarded	Average	Range	50	Average
Age	2-8 years	4 years 10 months		2-10 years		5 years
I. Q.	20-90	52		93-140		110
Interval	1-8 years	3 1/2 years		1-3 years		2 years
I. Q. change	-20 to +11	-0 3		-25 to +20		-0 9

TABLE 2.—I. Q. CHANGES IN MENTALLY DEFICIENT CHILDREN

	Malnourished Group		Standard Deviation
	Range	Average	
Age	2 years 1 month to 7 years 10 months	3 years 10 months	1 year 5 months
I. Q.	22 to 82	45	18
Interval	8 months to 7 years	3 years 7 months	1 year 6 months
I. Q. change	=8 to +44	+10	12

	Well-Nourished Group		Standard Deviation
	Range	Average	
Age	2 years 7 months to 7 years 7 months	4 years 10 months	1 year 5 months
I. Q.	22 to 88	52	19
Interval	8 months to 8 years 9 months	3 years 4 months	2 years 1 month
I. Q. change	=20 to +11	-0 3	6

Intercorrelations by the Pearson Product-Moments method

	Malnourished		Well Nourished	
Age initial vs I. Q. rise	-0 56r	± 0 08 P.E.r	-0 063r	± 0 106 P.E.r
I. Q. initial vs. I. Q. rise	-0 199r	± 0 10 P.E.r	-0 025r	± 0 106 P.E.r
Interval vs. age	-0 098r	± 0 10 P.E.r	-0 210r	± 0 102 P.E.r
Interval vs. I. Q. rise	-0 221r	± 0 102 P.E.r	-0 034r	± 0 106 P.E.r
Age vs I. Q.	+0 23r	± 0 102 P.E.r	-0 007r	± 0 106 P.E.r

TABLE 3.—I. Q. CHANGE/AGE IN MENTALLY DEFICIENT GROUP

Age	Malnourished—Average		Well Nourished—Average		Difference
	No. of Cases	I. Q. Change	No. of Cases	I. Q. Change	
2	11	+13	5	+2 4	+10 6
3	15	+14 4	7	+2 8	+17 2
4	8	+5 3	10	-1 8	+7 1
5	0		8	+1 6	
6	5	+1 6	9	-0 7	+2 3
7	2	+0 5	2	+1 0	-0 5

I. Q. CHANGE/INTERVAL IN MENTALLY DEFICIENT GROUP

Interval	No. of Cases	Average I. Q. Change	Range
6 months to 11 months	11	+5 6	-4 to +26
12 months to 18 months	12	+6 8	0 to +28
19 months to 25 months	7	+10 7	-2 to +20
26 months to 32 months	6	+11 3	0 to +23
33 months to 5 years	5	+0 6	-0 to +9

for the mentally normal in contrast with an average change of zero for the group well nourished at the time of the first test and still well nourished at the time of the second test.

3. The younger the malnourished child when nutritional therapy is instituted the greater the chance of improvement in mental function, since the I. Q. rise is insignificant after 4 years of age.

## NATIONAL COMMITTEE ON ALCOHOL ORGANIZED

The organization of a National Committee for Education on Alcoholism, Inc., was announced October 2. Offices will be at 2 East 103rd Street, New York. Elvin M. Jellinek, Sc.D., director of

the Yale School of Alcohol Studies, New Haven, Connecticut, is chairman of the board of the new committee and Mrs. Marty Mann is executive director.—J.A.M.A., Oct. 21, 1944

# Therapeutics

## CONFERENCES ON THERAPY

THESE are stenographic reports, slightly edited, of conferences by the members of the Departments of Pharmacology and of Medicine of Cornell University Medical College and the New York Hospital, with collaboration of other departments and institutions. The questions and discussions involve participation by members of the staff of the college and hospital, students, and visitors. The next report will appear in the January 1 issue and will concern "Uses and Abuses of Quinidine."

### Evaluation of Local Antisepsis

DR. MCKEEN CATTELL: Today we will attempt to evaluate antiseptics, with special reference to the problem of securing local antiseptic action by the application of drugs or other treatment directly to the skin and other tissues. The extent to which such antisepsis may be attained as well as the relative effectiveness of different procedures are important but difficult questions.

The discussion will be opened by Dr. Modell.

DR. WALTER MODELL: Many important advances which have been made in medicine have followed the introduction of antibacterial measures. Thus the pasteurization of milk, the treatment of drinking water, the sterilization of contaminated excreta, and the fumigation of ship-holds have saved countless millions of lives and have probably prevented disease in many more millions. In a lesser way statistically, but just as dramatically, the introduction of the aseptic technic in surgery, of the sterile glove, the sterile gown and drapes, and the sterile scalpel have changed the face of surgery. All these very effective measures kill bacteria before they reach the human host.

However, the destruction of bacteria by means of chemical agents after they reach the human host presents special problems, many of which have, up to only recently, completely defied solution. The systemic introduction of chemicals to destroy bacteria which have invaded the blood stream or the organs of the body met with practically no success until the development of the sulfonamides and penicillin. We have grown accustomed to failure in the quest for systemic antibacterial agents.

The prospects had always looked better for the surfaces of the body, the skin and the mucous membranes. Materials used for these surfaces are referred to as local antiseptics or disinfectants. There is no sharp distinction between them, although the term "disinfectant" is more frequently employed to convey the notion of complete destruction of the organisms, while "antiseptic" is more often applied to mere reduction of growth and multiplication of bacteria.

In relation to the compounds used for these purposes, the difference is often only a matter of concentration.

Faith in the efficacy of locally applied antiseptics or disinfectants is widespread. It seems like a simple step from the demonstration of powerful destructive action on bacteria in a test tube to a similar action on such bacteria invading the surface of the mucous membrane or the skin. However, the problems are rendered very difficult by the complexity of the structure of the skin and mucous membranes and the conditions attending the invasion of these tissues.

There is now ample proof that inferences drawn from test-tube experiments may not apply to skin and mucous-membrane disinfection. While there is no doubt that drops of silver nitrate solution in the eye prevent gonorrheal ophthalmia in the newborn, and a few other similar examples might be cited, there is indeed a question whether the application of disinfectant agents to the skin or mucous membrane does not often do more harm than good. At any rate, the view that the use of drugs by local application for the destruction of bacteria may give us a false sense of security deserves abundant consideration.

The list of substances which have antiseptic properties outside the body is long. In *New and Nonofficial Remedies* about twice as many pages are devoted to the listing of the anti-infective substances as to any other group of drugs. Attempts to attack bacteria by different mechanisms have led to a multitude of different types of agents, such as acids, alkalis, oxidizing agents, halides, freely ionized metals, poorly ionized metals, benzols, alcohol, formaldehyde, and the dyestuffs. Our discussion will concern itself chiefly with those which are for the most part nonselective, and destroy protoplasm pretty generally. There are, of course, the special problems of penicillin and the sulfonamides, which are not general protoplasmic poisons, whose actions are more specific, and, while they are employed for local application, apparently

with some success, they are not commonly classed among local antiseptics and disinfectants

Let me first point out how some of these disinfectants and antiseptics act and the factors which undermine the test-tube efficacy of these agents when they are applied directly to the skin and mucous membranes

Acids and alkalis change the pH of the medium in which the bacteria live, some dyes react with acid or basic radicals of the bacterial protoplasm, mercuric chloride precipitates bacterial protein, while the organic mercurials are thought to combine with sulphydryl groups of metabolites and phenols to combine with amino groups in the bacterial protein

Many factors modify the antiseptic power of these agents. Time is an important element. No antiseptic acts instantaneously, but the speed of action varies. Thus, whereas the phenol coefficient of mercuric chloride is only 13.5 in five minutes, in ten minutes it rises to 175 and in thirty minutes to 550. The significance of the time element is increased when dilute solutions are used, yet these are the only kind of solutions which may be used in therapy. Many factors in local application conspire to limit the effective time of exposure to any particular solution, such as evaporation, absorption, chemical combinations, and dilution. The temperature at which the antiseptics act on bacteria is also important. In general the effectiveness increases with temperature in the same type of curve as most chemical reactions. While it is possible outside the body to maintain the optimal temperature, in therapy, obviously, no such control is feasible. Specific concentrations of antiseptics have been found to be the most effective against bacteria, or to give the optimum relation between toxicity for the bacteria and for the host. Yet the same factors which make the control of the time of exposure to bacteria impractical also seriously interfere with the maintenance of optimal concentrations. Thus, 70 per cent alcohol by weight is said to be a critical concentration. Yet a moment after application to the body this concentration is quickly reduced.

Surface-tension characteristics of antiseptics are important in therapy. Lowering surface tension by adding reductants often increases the potency of a drug. This is said to be caused by favoring permeation or penetration, accelerating osmosis and diffusion, and making the surface reaction between the bacteria and the antiseptic a more intimate one, therefore, lowering the surface tension produces the same effect as increasing concentration. On the other hand, it should be remembered that the interfacial tension between air and liquid, as surface tension is usually measured, may give no accurate informa-

tion concerning the tension at the interface between the antiseptic and the bacterium.

The ability of antiseptics to penetrate varies considerably. Antiseptics in the colloidal state have little penetrating power, while the same substances in true solution have, in general, considerably more. Antiseptics which coagulate or precipitate protein penetrate more poorly than those which do not, therefore, the phenolic antiseptics usually penetrate more efficiently than mercuric chloride. Penetration *in vivo* is always an important problem, since the multicellular membrane of the skin and organs presents a formidable barrier to all antiseptics. The presence of protein in the medium seriously embarrasses antiseptic action. Protein affords the bacteria mechanical and chemical protection. It prevents penetration, it reacts with the antiseptic to render it inert, insoluble, or less toxic. Particulate matter may adsorb some of the antiseptic. While this effect is universal, some, such as the chlorine compounds and potassium permanganate, are far more seriously impaired by the presence of organic matter than others, such as the benzol derivatives. It hardly needs mention that organic matter cannot be avoided or in any way limited in therapy with antiseptics, and as a matter of fact, the situation which calls for the use of antiseptics is often that which is accompanied by a free flow of serum or pus.

In evaluating these agents several tests are applied which attempt to take these limiting factors into account. The phenol coefficient, which when first conceived, tested only the potency of an agent against the Hopkins strain of *Bacillus typhosus* under standard conditions of temperature and time, has been expanded and modified to test as well a variety of organisms, the effect of organic matter, and penetration of a gel. In addition, the effect of these agents on suspensions of leukocytes or embryonal cells is also tested to obtain a ratio of toxicity between animal and bacterial cells.

All these tests applied to a drug appear to give a well rounded answer concerning the relative effectiveness of an antiseptic. Yet the expected efficacy is usually not realized when the antiseptics are given actual therapeutic trial. Some reasons for this failure have already been pointed out. Most antiseptics penetrate tissues poorly, yet most so-called surface infections are at least several cell layers deep. The cell membrane is a greater barrier to penetration than the agar gel which is usually used to test penetrability *in vitro*. A study by Nungester and Kempf has a bearing on this point. They swabbed the tails of mice with cultures of streptococci. Then they dangled the tails in baths of one of several anti-



septics to be tested. Finally the tails were amputated and implanted into the peritoneal cavities of the mice. Practically all died of peritonitis. The inoculation with the bacteria was on the surface of the skin, and surely there is no more effective way of applying antiseptic than dipping. Yet, since some bacteria must have penetrated several layers of skin, this presumably effective treatment was not effectual. This difficulty in penetration also accounts for the serious problem encountered in sterilizing catgut by any method other than heat.

The shape of the infected area is important. A simple experiment demonstrates this. It is easy to sterilize the walls of an ordinary test tube with any ordinary potent antiseptic; yet if the walls of the test tube are drawn out into many thin filaments, making a multitude of crevices, it becomes exceedingly difficult to sterilize the tube with the same chemicals. This type of wound-model indicates why the irregularities and crevices of infected wounds seriously retard the action of antiseptics.

Antiseptics may also destroy some of the body's defenses against infection. Thus Fleming has shown that when lysozyme, one of the natural antibacterial defenses, is mixed with solutions of chlorine antiseptics, the power of both is reduced. The result of such a combination therefore favors bacterial development. Fleming maintains that often the concentration of an antiseptic is quickly lowered after application to a level below that which is antibacterial but which remains for some time antagonistic to the natural defenses of the body.

The cells of the skin and organs and the leukocytes may also be killed by effective concentrations of antiseptics. Very few antiseptics indeed have a truly favorable therapeutic index, *in vitro*, killing or inhibiting bacteria at significantly lower concentrations than they do leukocytes. Thus most of them also kill some cells, irritate others, stimulate the flow of serum, and produce the best possible medium for the growth and multiplication of the bacteria which survive the initial antiseptic blow. There is evidence collected during the last war which showed that after contaminated wounds were débrided, irrigation with sterile saline produced cleaner wounds, and wounds which healed more quickly than those treated with any of a number of antiseptics. Indeed, impression cultures showed that the bacterial flora was most luxuriant in those wounds treated with antiseptics, while it was very sparse, by comparison, in those merely irrigated with sterile saline.

All of the factors mentioned conspire to make what looks like an effective antiseptic not only useless but sometimes also harmful.

I would like to end with a quotation from Alexander Fleming written some twenty-five years ago. He referred only to surgery, but the same advice applies to all medical practice in which antiseptics are used. He said that the evidence "would seem to show that the antiseptic plays no part in the primary treatment of wounds. If this is so, then there is a very great disadvantage in the use of an antiseptic from the surgeon's point of view. It is very difficult for the surgeon not to be deluded into the belief that he has in the antiseptic a second string to his bow, and consequently it will tend to make him less careful in his surgical treatment of the wound. If he knows that he has nothing to fall back on, then, even with the most conscientious individuals, the surgery would improve. Because of this alone it would be well if the treatment of the wound with antiseptics in the early stage were abandoned and the surgeon relied on his skill alone. All the great successes of primary wound treatment have been due to efficient surgery, and it seems a pity that the surgeon wishes to share his glory with a chemical antiseptic of more doubtful utility."

DR. CATTELL: Dr. Modell has made some challenging statements. I don't know whether he is going to be allowed to get away with all of them. We have present men working in the fields of dermatology, surgery, urology, and medicine, and we would like to hear from them in relation to this problem.

DR. C. H. WHEELER: I wonder if we might ask Dr. Modell to define the problem a little more closely.

DR. MODELL: I question whether any useful purpose is served in rubbing the skin with a little alcohol before introducing the needle through it for a hypodermic injection, whether there is any value in swabbing an infected throat with an antiseptic, whether there is any use in irrigating an infected bladder with such agents, or the eye, or the vagina, or a wound. I think that these are for the most part useless gestures, sometimes detrimental, and that reliance on these attractive practices leads one away from better drugs and better technics.

DR. C. GARDNER CHILD: Probably no single technical subject in surgery has been the object of more attention than has this one. In attempting to further good surgical technic innumerable efforts have been made to discover some agent which would sterilize the skin through which an incision was to be made. I think that in general the remarks already made hold true. It has certainly been discouraging to discover that each of the chemical agents, as it has been placed in use, has proved to be ineffective or to do more harm than good. In a recent report the

author found his results as good, in fact better than previously, when the only agent he used for preparing the skin was a bland white soap and water

At the present time the Department of Surgery uses the following method of skin preparation. First, fat and grease are removed with benzene, followed by alcohol and ether. The skin is then painted twice with 3.5 per cent iodine, which in turn is removed with alcohol. Some degree of superficial sterilization of the skin is probably accomplished by this method, but certainly it does not extend to the deeper layers, into the hair follicles or skin gland systems.

Traumatic wounds constitute a much larger problem. Here mechanical cleansing with copious amounts of saline and thorough débridement are the only methods employed in converting a contaminated wound into a clean wound.

From the surgical point of view I would agree almost entirely with what has been said this afternoon, namely, that the mechanical cleansing of the skin and wounds is about all that is effective. The use of various chemical antiseptics accomplishes little and often is harmful.

DR JOHN M. McLEAN: Do you use any soap on the skin?

DR CHILD: Yes.

DR MODELL: In connection with skin preparations, Price has shown that after scrubbing the hands with soap and water for about ten minutes about 100,000 bacteria can still be recovered from the wash water. After sterile gloves have been on, for two or two and a half hours during an operation, the bacterial population may again be as high as it was before the scrubbing.

DR BERNARD MAISEL: Price also reported that the use of alcohol and soap facilitated the lowering of the bacterial flora of the hand.

DR MODELL: But no measures make the hands absolutely sterile. Price has shown that antiseptics may fix bacteria to the skin of the hands but neither kill nor remove them. They may still be viable.

DR HARRY GOLD: Do you imply that alcohol used with the soap in scrubbing exerts an antiseptic action?

DR MAISEL: I think that was a statement of Price in his report.

DR GOLD: Isn't there something strange about that, since other reports show that it may take as long as sixty minutes for alcohol to kill the staphylococcus?

DR MODELL: Price found that a specific strength of alcohol, namely, 70 per cent by weight, made an effective antibacterial washing solution. This concentration takes much care in preparation and is easily disturbed. For

example, it is quickly changed during the course of its use as a wash. The slightest deviation from 70 per cent by weight—not by volume—makes it an ineffectual wash.

DR GOLD: I would like to ask why we continue at the New York Hospital the time-honored mixture of alcohol and iodine in preparing the skin for operation? Is that just tradition?

DR CHILD: It probably is mostly a matter of tradition.

DR CATTELL: Is not the color helpful?

DR CHILD: We take the color off.

DR CATTELL: You do finally, but it tells you where you have been.

Perhaps we will take up some of the other aspects, and from here go on to the dermatologist, Dr Sulzberger.

DR M. B. SULZBERGER: In his remarks Dr Modell has defined "antiseptic" in a somewhat restricted sense and has also deliberately excluded from his discussion a number of recognized bactericidal or bacteriostatic agents such as sulfonamides, penicillin, etc.

For the purposes of my own comments I shall define an "antiseptic" in the usual or classic way, i.e., as given in standard medical dictionaries. The definition of an antiseptic, then, usually reads something like this: "An agent which prevents the action of germs which produce fermentation, putrefaction, or disease." I believe it must be granted that under this definition many agents used on the skin's surface or on wounds or skin infections act as antiseptics.

I say this despite my essential agreement with the facts which Dr Modell has so well set forth, all showing that no known form of external application is capable of effecting complete or perfect sterilization of the skin's surface without damage to the skin itself. We have found that neither living skin in its natural position nor excised skin tissue can be completely freed of the presence of living micro-organisms by any form of application, which does not destroy or seriously damage the living cutaneous tissue. When Dr Rudolph Hecht and I made "skin antigen" for sensitization experiments and skin tests, we used many different bactericidal and bacteriostatic solutions including iodine, mercurials, and sulfonamides in our attempts to sterilize the excised skin and still preserve its characteristic specificity. We were unsuccessful, and bacteria remained viable in the excised pieces.

This fact is even more apparent when trying to sterilize the living skin on the body. Older studies and the more modern washing experiments of Price, cited by Dr Modell, the experiments of Pillsbury, Livingood, Nichols, and Shaffer with wash waters, with other agents, and with sulfonamides, all prove this fact. We possess no measure

or method which will destroy all the micro-organisms (many of which live and propagate within the horny layer and within the skin crypts and openings of the follicles and glands of the skin) without damaging the living skin cells. This is the basis for Dr. Modell's important conclusion that there has been a rather general tendency to lean more heavily on external antisepsis than the facts appear to warrant.

Nevertheless it would, I believe, be erroneous to conclude that local antisepsis is of no value whatsoever. Take for instance the soap-and-water-washing experiments of Price and the sulfonamide studies of Pillsbury and coworkers. These procedures produced a very considerable reduction in the number of bacteria on and in the skin. Dr. Modell, do you happen to recall the degree of reductions in numbers in Price's washings?

DR. MODELL: After ten minutes of scrubbing, the numbers were reduced from about ten million bacteria to about one hundred thousand in the last wash water.

DR. SULZBERGER: Such distinct reductions in numbers of micro-organisms must be considered as a demonstration of the possible antiseptic effect of soap and water and of other agencies applied—for, granted a certain degree of natural protective capacity on the part of the tissues, the actual number of potentially pathogenic bacteria is a significant factor in overcoming tissue resistance—and reduction in their numbers may well prevent the action of germs producing disease. The damaging effect upon micro-organisms, the bacteriostatic effect or inhibition of generation and of multiplication, and the fixation or mechanical removal which can be accomplished either by chemotherapeutic agents, by solvents and precipitants and fixatives (alcohol, etc.), by washings, or by many of the other external measures generally employed, all are worthy of consideration as practical antiseptic measures—provided one condition is fulfilled. This condition is that the measures used to remove, fix, or damage the micro-organisms have the proper *therapeutic index*, i.e., that they accomplish their effects in regard to the micro-organisms without producing too much damage to the skin tissue. This is of the very greatest importance in cutaneous antisepsis in relation to both prophylaxis and treatment of infection, for even slight degrees of skin damage may materially interfere with the usually adequate and remarkably efficient natural bactericidal and protective powers of the skin and its secretions. The *vis medicatrix naturae* of the normal skin is the most important factor in the prevention of cutaneous infections. We must preserve these protective powers at all costs. Any measure which radically disturbs or

destroys the normal "acid mantle" or the skin's electrophysical barriers or the bacteriostatic properties of sweat or which in any other way interferes with the truly remarkable natural protective mechanisms is likely to do more harm than good, regardless of its intrinsic or in vitro bactericidal or antimycotic activity.

This is one reason why there is so little relationship between the antibacterial or antimycotic activity which an agent may evidence in the laboratory, and the effects achieved by that agent when used on the skin. Another very striking reason for the almost constant discrepancies between *in vitro* effects and clinical therapeutic effects is that the actual mechanisms by which agents applied to the skin cure or prevent microbial disease often have no relationship whatsoever to bactericidal or fungicidal mechanisms as manifested in vitro.

Among the most important mechanisms operative in curing or preventing infection is that of removal of large numbers of pathogens from the skin's surface. One way in which this is accomplished is by dissolving, emulsifying, and washing off grease and horny material and sweat and dirt (the skin's "soil") together with the micro-organisms which are intimately incorporated in this soil. Another and most efficient way of preventing micro-organisms from producing disease is by helping the skin itself cast them out. This can be done through the application of agents promoting desquamation. It appears to me probable that many of the medicaments we use in treating surface infections (and particularly in treating or preventing fungous infections) effect their benefits by promoting more rapid desquamation and thereby aiding in the removal of the pathogenic agents. This mechanism may well be the *modus operandi* of such common "antiseptics" as salicylic acid, benzoic acid, resorcin, mercurials, sulfur, tincture of iodine, etc.

Another manner in which infecting agents are removed is through the measures employed to soften and evacuate abscesses, or to remove crusts or secretions, etc., in which micro-organisms may be present or may thrive. Thus, compresses, wet dressings, keratolytic or softening ointments and plasters, soap and water, etc., all become "antiseptics."

Still another form of cutaneous antisepsis acts through mobilization and concentration of the natural protective agents of the circulatory and tissue fluids, bringing the phagocytic cells, the antibodies, and other anti-infectious agents to the site. This action is inherent in hot poultices, in "counterirritants," etc.

A more subtle form of antisepsis is effected by measures which preserve or restore the nor-

mal hydrogen ion concentrations of the skin's surface. In most areas the normal skin's surface is distinctly acid, having a pH between 3.5 and 4.5. It is obvious that this acidity is protective, since it tends to damage and impede pathogenic micro-organisms. As soon as there is the slightest abrasion, interruption of continuity, or inflammation, the pH tends to increase, and many skin lesions have a pH as high as 7.0, 7.5, or 8.0. Medicaments with acidifying and buffer effects, such as Burrow's solution, combinations of organic acids and their salts (lactic acid, propionic acid, undecylenic acid, succinic acid, etc.) probably help to restore the normal degree of acidity and thus help to counteract infection.

It will be apparent that these few measures I have been able to list all act by aiding and sometimes by intensifying, the natural antimicrobial protective mechanisms of the skin. These effects can therefore never be observed or studied through *in vitro* experiments. They are, nevertheless, antiseptic effects—not, perhaps by Dr. Modell's definition but certainly by the classic definition of "agents which prevent the action of germs which produce disease."

In addition to these measures there are conditions under which the intrinsic *in vitro* bactericidal or bacteriostatic or fungicidal or -static effects of medicaments prove useful. Thus, for example, in treating impetigo contagiosa the cure may be accomplished by aiding the natural resistance by merely scrubbing off the crusts and applying softening and occlusive measures, such as the application of an inactive grease like petrolatum. However, it is undeniable that the *autoinoculation of new sites* tends to be inhibited if a mercurial or sulfonamide or other such antiseptic is incorporated in the ointment or other topical therapeutic agent which is spread over the skin's surface and stands ready to catch the micro-organisms which are being disseminated from the sites of the original lesions.

In this manner the iodine or mercurial painted on a belly may serve to good purpose, not by destroying all the micro-organisms already present in those skin areas, but perhaps by destroying the chance ones reaching the skin afterwards from the air or hands, etc. Moreover, if a physician's hands have been covered with a sulfonamide containing cream, micro-organisms which leave those hands may carry with them their own pharmacotherapeutic nemesis.

What I have said is perforce fragmentary, but I hope that it will serve to bring out three principal points.

First that the mechanisms through which antiseptics in the wider sense is accomplished on the skin are not usually through the intrinsic antiseptic properties of the agents applied but

rather by means of aiding, intensifying, or restoring the skin's natural protective devices.

Second, that all measures used in the antiseptics of normal skin must possess an absolute minimum of harmful effects upon the skin itself, otherwise the interference with powerful, natural protective forces will often vitiate any intrinsic antiseptic properties the measures may possess.

Third, that the recognition of the above facts inevitably leads to the conclusion that studies on skin antiseptics (including the evaluation of old remedies and the development of new ones) require a drastic reorientation. In order to gain valid information regarding desirable and undesirable effects of cutaneous antiseptic procedures, it is imperative to study by all possible techniques the effects accomplished and the changes brought about when the remedies are applied to the living human skin, rather than to study their effects on other organs, or in fluids or cultures or test tubes.

The therapeutic index of a cutaneous antiseptic measure cannot be established except on the skin itself, for both antiseptic activity and harmful effects often depend on mechanisms which are peculiar to the living skin *in situ* and on conditions which cannot be duplicated elsewhere.

Dr. MODELL. I find myself for the most part in agreement with Dr. Sulzberger. He has pointed out that chemical agents may act in many ways to rid the skin of bacteria, and that these may include materials which have little or no power to kill bacteria. Most people who do something on the skin to prevent infection have in mind that the substance they are using will kill bacteria. They place great faith in the value of this action. I have taken the position that such an action is of little value under the conditions of actual practice, and may be harmful. I think that this is substantially what Dr. Sulzberger has stated.

Dr. CATTELL. I hope we can discuss these problems further, but we have more ground to cover. Dr. Marshall, I wonder whether you would take up the use of local antiseptics in the urinary tract.

Dr. V. F. MARSHALL. Dr. Modell mentioned the urologic procedure of irrigating the bladder and questioned whether it kills germs in the bladder. Recently a heroic attempt was made to sterilize the bladder, primarily with the idea of killing a virus which might be the cause of papillomatosis. Fifty per cent phenol and glycerine were introduced in the bladder. Whether the patients so treated will get papillomas is very difficult to determine, because they have had so much trouble. However, the treatment did not sterilize the inside of the bladder. In fact, invariably these patients developed in-

fection as a result of the damage to the bladder wall.

It has been shown numbers of times that it is difficult to infect a normal bladder; that is, one which empties itself well. If you put virulent cultures into the bladders of dogs, only a small percentage develop cystitis, and those cases clear up rather quickly. But if you injure the bladder, by poking or scratching the surface, or radiating with x-ray or radium, the same cultures infect readily.

In irrigating the bladder we don't think we are sterilizing the surface of the bladder wall. We know we are not. Several beneficial things are accomplished, however. Primarily, it constitutes a mechanical cleansing of the bladder. Infected bladders usually have a great deal of mucoid matter, pus, etc., which is washed out. Stagnant urine is removed. Drainage is promoted, and any infection which drains well is more likely to be taken care of by the body forces. The other thing which has to be remembered is that a large number of our patients have residual bladder urine. Organisms apparently multiply rapidly and very well in the warm residual urine. We believe that, if you leave some mild antiseptic in the bladder, the residual urine will have bacteriostatic properties that it would not otherwise have. In short, we don't do bladder irrigation with the idea of sterilizing the bladder by the action of the irrigating agent.

In urologic surgery we sometimes use only soap and water for skin preparation. This is most frequently done in operations on the external genitalia. One reason is because in these areas blistering occurs easily after the stronger chemicals which we use on the skin elsewhere. I have no impression that in those instances there is any greater incidence of infection than in those patients prepared in the standard manner. We routinely use soap and water preparation for transurethral resections, frequently ligating the vasa at that time, and I don't recall here either that the incidence of infection is higher than in those done after alcohol and iodine preparation.

The other question is that of the sterilization of the urethra. It apparently cannot be done without damaging the urethra. There have been a number of attempts made to do this. You can reduce the bacterial population by irrigating, but you cannot get rid of the organisms completely or permanently. It is much like the skin.

DR. CATTELL: There is one more organ which we would like to have considered before we ask for general discussion. I wonder whether Dr. McLean would say something about the possibility of sterilization in the eye.

DR. McLEAN: There is not very much to be said which has not already been said. Dr.

Modell mentioned the outstanding exception, the accepted Credé method for preventing ophthalmia neonatorum, and there is no question about the way that it has reduced the incidence of ophthalmia neonatorum. Otherwise, with external ocular infection, particularly conjunctivitis, there seems to be little room for argument as to what is effective and what is not, and in the more serious cases of conjunctivitis there seems to be nothing chemical which can be introduced in the eye which is anywhere nearly as effective as repeated simple irrigations which remove the excess pus and debris which tend to collect in the eye and impede normal drainage. I must except, of course, as we did in the beginning, the sulfonamides and quite likely the mold extracts.

It is very true, though, that there is a long list of local antiseptics which may be dropped into the eye. I can't begin to remember them all. Under various trade names, they include many metallic salts, both inorganic and organic, particularly those of silver, mercury, copper, zinc, and some benzene ring preparations. By and large they are sufficiently diluted so they don't do very much harm, but I don't believe you can say much more for most of them. The irritant properties of many of them help to increase the flow of tears, and thus enhance cleansing.

There is one apparent exception in the case of angular conjunctivitis. This is caused by the Morax-Axenfeld bacillus, which secretes a proteolytic enzyme. The symptoms are promptly arrested by the use of a solution containing a zinc ion (usually the sulfate or the chloride). However, the action is not bactericidal, for the bacillus grows well in culture media containing zinc. The zinc ion has its symptomatic effect by inhibiting the enzymatic proteolysis.

So far as sterilization of the eye and the surrounding skin before operation is concerned, that is another problem. We use approximately the same technic as Dr. Child outlined for preparing the surrounding skin of the lids, face, and brow, and we use simple irrigation of the conjunctival sac in the hope that we will mechanically get rid of some of the organisms which may be there. We do use mild silver protein just before irrigation, not because we believe that silver protein in one form or another is going to sterilize anything but because it makes it easier both mechanically and visually to insure a thorough irrigation, which is made until the returns are clear, using the silver protein as an indicator.

I would like to ask Dr. Modell one question. If you were to undergo a major surgical procedure, how would you like your skin prepared and how would you like your surgeon to prepare his hands?

DR MODELL I would want the surgeon to take every precaution not to introduce more bacteria into my body than were already there. The instruments, the drapes, the dressings, and all the other paraphernalia should be made just as sterile as possible. I don't doubt that the washing of the surgeon's hands is desirable, simply on the basis that the gloves might tear. I certainly would want him to wear sterile gloves when he operates on me. I would demand a good cleansing of my skin with soap and water, which is, I think, about as good a preparation of the skin as can be obtained.

DR McLEAN Would you like to have his hands soaked in alcohol or any other solution either before or after washing?

DR MODELL I wouldn't care.

DR McLEAN Would you object to it?

DR MODELL No, I don't think it would make any difference as long as they were washed for ten minutes.

DR McLEAN Would you object to anything besides soap and water on your skin?

DR MODELL I don't think painting with a colored substance is at all harmful.

DR McLEAN How about the fatty solvents, benzene, ether, and what not?

DR MODELL I think they are unnecessary.

DR McLEAN I am trying to find out what you would want.

DR MODELL I would insist on a cleansing with soap and water. I don't think anything else accomplishes more.

DR CHILD Could I comment on one thing? Scrubbing the skin should be a gentle procedure, because anything which tends to cause a serious ooze defeats the purpose of cleansing. We saw that beautifully demonstrated in the laboratory not so long ago in experimental animals.

DR MODELL Dr Child, how do you prepare the field in the region of the rectum for, let us say, a hemorrhoidectomy? What skin sterilizing procedures do you use there?

DR CHILD I use nothing more than soap and water. Others apply various dyes to a vehicle which will not cause a chemical dermatitis. Soap and water, I think, is the most desirable preparation.

DR MODELL This would indicate that soap and water will serve satisfactorily in the preparation of a most highly contaminated operative field in a surface full of crypts and folds. It should, therefore, be adequate for the preparation of the abdomen.

DR SULZBERGER I think that this may be one of the rare occasions on which I can come to the aid of a surgeon. When one removes "soil" by scrubbing with soap and water it requires a certain amount of mechanical energy or friction.

The amount of friction necessary may perhaps be reduced by using a combination of grease solvents and soap and water washings. The dissolving of the grease and the softening of the film in which the bacteria and other elements of the soil are imbedded permits the easier emulsification and washing off by soap and water.

DR CATTELL Isn't soap more effective?

DR SULZBERGER I believe that either grease solvents or soap-and water washings soften and remove soil even when used alone, but that with their combination you may perhaps get a sort of synergistic effect, which requires a minimum of friction and skin damage while effecting a maximum degree of surface cleansing and removal of micro-organisms.

DR CATTELL Those are agents which are not desirable from the standpoint of the skin, such as benzene and alcohol.

DR SULZBERGER Of course organic solvents may often be harmful because they remove too much of the natural oils and skin greases. This holds true particularly on skins or in skin areas which have an inadequate grease producing capacity or when the solvents are used too long or at oft-repeated short intervals.

DR MAISEL I don't know why sulfonamides and penicillin were excluded from the discussion, for it seems to me that those are the agents to which most people are now attempting to orient themselves.

DR MODELL I believe the sulfonamides will stand by themselves and so will penicillin and other antibiotics. This discussion should serve to emphasize their importance by helping to eliminate a lot of chemicals now used. From the report of the pharmacist, Mr. Clark, we learn that last year we used for the hospital, not including the college, about 4,000 gallons of alcohol. Today alcohol is a critical material. Its usefulness in preparing the skin before hypodermic injection is dubious at best, and certainly useless when we consider that no one allows it to remain for more than one instant before the needle is plunged into the skin. Does anyone think we have a vital procedure here? Does it do anything more than make the needle-prick hurt more than it would without alcohol on it?

DR WHEELER I think anyone who cleans the skin with alcohol before injecting should not think he is sterilizing the skin but rather that it is just a convenient and good-smelling way of cleaning it. I would be willing to use anything else if it were equally convenient. Soap, I am sure, could be used with equal results.

DR MODELL I would like to point out that it is a fairly common procedure for the nurse to put an alcohol sponge on the sterilized needle while it waits for the doctor. Since bacteria

can be cultured from most of the 70-80 per cent alcohol used, this little bit of nursing technic reduces the sterility of the whole injection procedure.

DR. CATTELL: Except for the extra trouble, it appears that the results would be probably better from soap and water.

DR. WHEELER: I don't think they could be better, because the results from alcohol are perfect.

May I ask a question? Dr. Sulzberger, in a disease like impetigo, a bacterial infection of the skin, do you feel that the use of local applications is worthless?

DR. SULZBERGER: No, the use of local applications is surely valuable, but a good deal of what they do is mechanical. It has been demonstrated that the vigorous use of soap and water and petrolatum sometimes brings results just about as good and as prompt as white ammoniated mercury. Furthermore, white ammoniated mercury without measures which remove the crusts does little more than inhibit autoinoculations.

DR. GOLD: Do you think we could get general agreement on the need for at least one year's experience in New York Hospital with the use of soap and water for all kinds of skin preparations in all situations in which antiseptics have been used in the past for presentation at another conference next year?

DR. CATTELL: It would be fine if we could. Apparently surgical technics are already going along those lines.

## Summary

DR. MODELL: A therapeutic procedure practiced more widely than any other by both physicians and the laity is the application of a chemical for the purpose of destroying bacteria on the mucous membranes and the skin. The agents referred to as local antiseptics or disinfectants

are used in the form of swabs, instillations, irrigations, sprays, etc. The spot is dabbed with alcohol before every injection. The skin is painted with iodine and washed with alcohol, or treated by some other antiseptic, before surgical operations. The bladder is irrigated with an antiseptic wash. The conjunctiva is flushed with a solution containing an antiseptic. There are numerous other practices of a similar nature. The discussion omitted such special materials as the sulfonamides and penicillin and centered on the less specific antiseptics which are the ones most widely used. These are general protoplasmic poisons and they are presumed to be efficacious against all kinds of bacteria.

The value of local antiseptics is challenged. The discussion brought forth the fact that local antiseptics never sterilize skin or mucous membranes. In spite of their striking power in test-tube experiments, the conditions prevailing in infections of the skin and mucous membranes are such that the net result of their routine use is not beneficial to the patient, and frequently harmful. The exceptions are few. The practice of applying a solution locally for its germicidal action creates a sense of security against infection which appears to have no basis in fact. Thorough washing with soap and water wherever possible seems to do all that can be accomplished in the way of reducing the bacterial population of the skin. Irrigation with saline alone seems to be as effective as when chemical antiseptics are added to the wash. The firm entrenchment of local antiseptics in the minds of the physician and laity seems to depend chiefly on the test-tube result, theory, hope, and tradition.

How the antiseptics act, why their suggestive efficacy in the laboratory experiment fails to materialize in their use on human tissues, and how their use may promote rather than retard infection, were among the subjects developed in today's discussion.

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## REGISTRY OF VETERINARY PATHOLOGY ESTABLISHED

Recently an arrangement was approved by the Surgeon General of the U.S. Army and the board of governors of the American Veterinary Medical Association for the establishment and maintenance at the Army Institute of Pathology, Army Medical Museum, Washington, D.C., of a Registry of Veterinary Pathology. This registry will become a unit of the American Registry of Pathology, an organization operating by the authority of the Surgeon General under the sponsorship of the National Research Council. Material submitted should be addressed to Director, Army Institute of Pathology, Army Medical Museum (attention Registry of

Veterinary Pathology), 7th and Independence Avenue S.W., Washington 25, D.C. The director will be glad to furnish further instructions to contributors for submission of material to the Registry of Veterinary Pathology. The members of the Special Committee on Registry of Veterinary Pathology are W. H. Feldman, Mayo Foundation, chairman; Capt. Charles L. Davis, V.C., Army Institute of Pathology; Harry W. Schoening, chief, Pathological Division, U.S. Bureau of Animal Industry, and, member ex officio, Lt. Col. Baldwin Lucké, M.C., deputy director, Army Institute of Pathology.—*J.A.M.A.*, Sept. 16, 1944



FOR  
SYMPTOMATIC  
RELIEF  
IN THE  
ARTHRITIC  
SYNDROME

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**AMES COMPANY, INC.**  
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# Postgraduate Medical Education

*Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman (428 Greenwood Place, Syracuse); George Bachr, M.D., and Charles D. Post, M.D.*

## Poliomyelitis

THE Suffolk County Medical Society will meet for postgraduate instruction on December 6 at 6:30 P.M. at Friede's Inn, Smithtown.

A lecture will be given by Dr. Philip M. Stimson, associate professor of clinical pediatrics at Cornell

University Medical College, who will speak on "Poliomyelitis."

This instruction is presented as a cooperative endeavor between the Medical Society of the State of New York and the State Department of Health.

## Rheumatic Fever

A TEACHING Day on rheumatic fever and rheumatic heart disease was held at the Syracuse University College of Medicine on November 30 under the auspices of the Cayuga, Cortland, Onondaga, and Oswego county medical societies, the Medical Society of the State of New York, the New York State Department of Health, and the Syracuse University College of Medicine.

The afternoon meeting, held in the auditorium at 2:00 P.M., was called to order by Dr. Herman G. Weiskotten, Dean, Syracuse University College of Medicine. The chairman of the meeting was Dr. J. G. Fred Hiss, professor of clinical medicine at the Syracuse University College of Medicine. The program consisted of four lectures: "Etiology, Epidemiology, and Diagnosis of Rheumatic Fever and Rheumatic Heart Disease," by Dr. T. Duckett Jones, associate professor of medicine, Harvard Medical School; "Treatment of Rheumatic Fever," by Dr. Albert D. Kaiser, associate professor of pediatrics, University of Rochester School of Medicine and Dentistry; "The Prevention of Recurrences in the Known Rheumatic Patient," by Dr. Homer F. Swift, Hospital of the Rockefeller Institute for Medical Research; and "The Need for a Public Health Program for the Care of the Rheumatic Child," by Dr. David D. Rutstein, Deputy Commissioner of Health, City of New York Department of Health.

Questions to be asked on the lectures were written

down and discussed at the panel meeting in the evening.

Several exhibits were shown at the Syracuse University College of Medicine. They included: "The Proposed Plan of Operation of the Syracuse District Cardiac Program," demonstration of a model, by Dr. J. G. Fred Hiss; Metropolitan Life Insurance Company, Dr. George M. Wheatley, assistant medical director; "Laboratory Diagnosis," by Dr. O. D. Chapman, professor of bacteriology and parasitology at the Syracuse University College of Medicine; "Case-Finding and Follow-Up Care (Physicians, Public Health Nurses, and Other Agencies)," by Dr. C. A. Sargent, District State Health Officer, and Franziska Glienke, R.N., District Supervising Nurse.

Dinner and the evening meeting were held at 7:00 P.M. in the University Club of Syracuse. Dr. Brewster C. Doust, professor of pediatrics at Syracuse University College of Medicine, was chairman of the meeting. The Syracuse District Cardiac Advisory Committee, which consists of Drs. O. D. Chapman, B. C. Doust, J. G. Fred Hiss, M. W. Kogan, O. W. H. Mitchell, G. C. Sincerbeaux, S. A. Ver Nooy, and H. G. Weiskotten, was introduced. The program consisted of a lecture, "The Proposed Plan of the Syracuse District Cardiac Program," by Dr. J. G. Fred Hiss, followed by a panel discussion with the following speakers: Drs. J. G. Fred Hiss, T. Duckett Jones, Albert D. Kaiser, H. M. Marvin, D. D. Rutstein, and Homer Swift.

## General Medicine

POSTGRADUATE instruction in general medicine was given before the Steuben County Medical Society on November 9 at 12:30 P.M. at the Wagner Hotel in Bath.

The lecture was "Treatment of Jaundice"; it was delivered by Dr. William F. Lipp, assistant in medicine at the University of Buffalo School of Medicine.

## Penicillin Therapy

INSTRUCTION in penicillin therapy was given to the Franklin County Medical Society on November 15 at 3:00 P.M. in the nurses' classroom, Alice Hyde Memorial Hospital, in Malone. Dr. Paul C. Clark, assistant professor of clinical medicine

at the Syracuse University College of Medicine, delivered a lecture entitled "Penicillin Therapy."

This instruction was presented as a cooperative endeavor between the Medical Society of the State of New York and the State Department of Health.

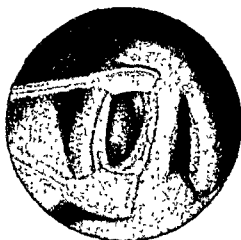
## CLINIC DIRECTORY

16,000 copies of the *Directory of Venereal Disease Clinics* (Supplement No. 4 to *Venereal Disease Information*, Revised 1944) have been distributed. Free copy supply is exhausted. Copies can be bought from Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.,

at 15 cents per copy (special prices for large quantities).

Purchasers other than State Health Departments should obtain authorization forms from the U.S.P.H.S. before ordering this or other P.H.S. VD films.—VD War Letter, Aug. 30, 1944

## SHRINKAGE IN MINUTES

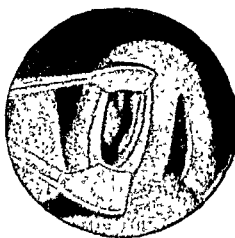


1:52 P. M. Inferior and middle turbinates are highly engorged and in contact with the septum. The airway is completely blocked.

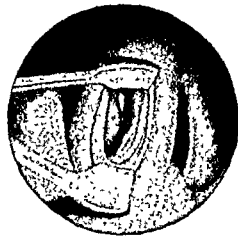


2:01 P. M. Maximum shrinkage has been obtained 9 minutes after two inhalations from Benzedrine Inhaler. The airway is open.

## LASTING FOR HOURS



3:15 P. M. Airway is still open. Benzedrine Inhaler produces a shrinkage equal to, or greater than, that of ephedrine.



4:00 P. M. Two hours after treatment, shrinkage persists. Benzedrine Inhaler shrinkage lasts 17% longer than that of ephedrine.

## ***A better means of nasal medication***

In reporting their carefully controlled investigation of vasoconstrictive drugs, Butler and Ivy state that inhalers and sprays are preferable to nasal drops, and are—in most cases—"the better means of nasal medication."

Arch. Otolaryng., 39 109-123, 1944.

Each Benzedrine Inhaler is packed with racemic amphetamine, S.K.F., 200 mg.; oil of lavender, 60 mg.; and menthol 10 mg.



Smith, Kline & French Laboratories, Philadelphia, Pa.

# Benzedrine Inhaler

**Rapid, Complete and Prolonged Shrinkage**

# Medical News

## Physicians' Home Makes Annual Financial Report

THE Trustees and the Board of Directors of the Physicians' Home have submitted the following financial report:

1. The amount and location of real property owned by the Corporation is as follows:

A plot of land at 171 Joralemon St., Brooklyn, New York (assessed 1943-1944—\$20,000.00).

2. The amount of the personal property owned by the Corporation, its location, and the manner in which it is investigated are as follows:

(a) Cash in banks—September 30, 1944

<i>Unrestricted funds</i>	
The Chase National Bank—City of N.Y....	\$ 10,801.09
Stamford Savings Bank.....	972.69
Bank for Savings.....	1,048.76
	<u>\$ 12,822.54</u>

<i>Restricted Funds</i>	
Excelsior Savings Bank.....	\$ 7,731.69
Dry Dock Savings Bank.....	4,783.67
Stamford Savings Bank.....	2,045.04
	<u>\$ 14,560.40</u>
<b>TOTAL.....</b>	<u><b>\$ 27,382.94</b></u>

(b) Investments

	Issuer	Market Values
15 M	United States of America, 2 1/4% Treas. Notes due 4/31/54.....	\$ 16,200.00
2 M	United States of America, 2 1/4% Treas. notes due 9/15/72.....	2,020.00
25 M	United States of America, 2 1/4% Defense Savings Series G.....	25,000.00
7 M	City of New York, 3% Corp. Stock Water Supply '77.....	7,560.00
10 M	Baltimore & Ohio R.R. Co., 6% Refd. Bonds, Series C '95.....	6,400.00
5 M	N.Y.C. & H.R. R.R. Co. 1st Mort., 3 1/2% due '97.....	4,750.00
5 M	Penna. R.R. Co. Genl. Mort. C, 3 1/4% due '70.....	5,300.00
5 M	Atlantic Coast Line R.R. 1st Mort., 4% due '52.....	5,150.00
5 sh	Rochester Gas & Elec. Co. Pfd., 6% series D.....	540.00
4 sh	Calumet & Hecla Copper Comm.....	26.00
5 sh	Penna. R.R. Co. common stock.....	150.00
5 sh	Beacon Chocolate Co.....	.....
		<u>\$ 73,096.00</u>

(All said securities being held in a safe deposit box of the Corporation in the vaults of the Chase National Bank of the City of New York)

3. The amount and nature of the property acquired by the Corporation during the period beginning October 1, 1943, and ending September 30, 1944:

(a) Securities Purchased

U.S.A. Defense Savings Bonds Series G.....	\$ 11,000.00
15 M Railroad Bonds.....	14,450.10
	<u>\$ 25,450.10</u>

(b) Cash

Cash on hand October 1, 1943.....	\$ 3,425.37
Dues and contributions.....	37,539.89
Income from investments.....	2,199.48
	<u>\$ 43,164.74</u>
<b>TOTAL.....</b>	<u><b>\$ 68,614.84</b></u>

4. The amount applied, appropriated, or expended during such period, and the purposes, objects, or persons to or for which such applications, appropriations, or expenditures were made, as follows:

General expense, postage, appeals, etc.....	\$ 796.31
Maintenance of beneficiaries.....	5,919.25
Investments purchased.....	\$ 25,450.10
Loss on sale of investment.....	197.99
	<u>\$ 32,363.65</u>
Cash balance in general operating fund 9/30/44.....	\$ 10,801.09

B. WALLACE HAMILTON, M.D., Treasurer

### BALANCE SHEET, SEPTEMBER 30, 1944

<i>Assets</i>	
<i>General Fund</i>	
Property, 171 Joralemon St. (assessed, 1943-1944 at \$20,000) book value.....	\$ 1.00
Investments in stocks and bonds, market value.....	73,096.00
Cash in Chase National Bank.....	10,801.09
Cash in Stamford Savings Bank.....	972.69
Cash in Bank for Savings.....	1,048.76
	<u>\$ 85,919.54</u>
<i>Restricted Funds</i>	
Cash in Dry Dock Savings Bank.....	\$ 4,783.67
Cash in Stamford Savings Bank (Weed estate).....	2,045.04
Cash in Excelsior Savings Bank (Weed estate).....	7,731.69
	<u>\$ 14,570.40</u>
<b>TOTAL ASSETS.....</b>	<u><b>\$100,489.94</b></u>
<i>Funds</i>	
General Fund Surplus, September 30, 1944...	\$ 85,919.54
Restricted Funds.....	14,570.40
	<u>\$100,489.94</u>

### STATEMENT OF REVENUE AND EXPENSES

October 1, 1943, to September 30, 1944	
Cash on hand, October 1, 1943.....	\$ 3,425.37
<i>Receipts</i>	
Dues and contributions.....	\$37,539.89
Income from investments.....	2,199.48
	<u>\$ 43,164.74</u>
<i>Expenditures</i>	
Loss—sale of investment.....	\$ 197.99
General expense.....	796.31
Guests.....	5,919.25
	<u>\$ 6,913.55</u>
<b>TOTAL.....</b>	<u><b>\$ 36,251.19</b></u>

### Excess of Receipts over Expenditures

Cash in General Operating Fund.....	\$10,801.09
Purchase, U.S.A. 2 1/4% Defense Savings Series "G".....	11,000.00
5 M Atlantic Coast Line R.R.....	4,863.47
5 M N.Y. Central & Hudson River R.R.....	4,467.98
5 M Pennsylvania R.R.....	5,118.65
	<u>\$ 36,251.19</u>

Audited and found correct  
by Carl F. Miller, Accountant

## Medal Awarded Dr. Spencer for Cancer Service in 1944

ORGANIZATION of all cancer activities on a national scale was advocated on October 31 by Dr. R. R. Spencer, chief of the National Cancer Institute, Bethesda, Maryland, in a speech accepting the Clement Cleveland Award for outstanding

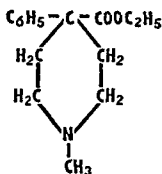
service during 1944 in the effort to control cancer by education.

The presentation of the award, a palladium medal named in honor of one of the founders of the

[Continued on page 2620]

# ANALGESIC SPASMOLYTIC SEDATIVE

*For Oral and Intramuscular Administration*



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piperidine-4-carboxylate  
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**Demerol hydrochloride**

**T**HE analgesic effect appears to be between that of morphine and codeine, and it persists for from three to six hours.

Demerol has many indications in medicine, surgery and obstetrics.

Before prescribing, physicians should read carefully the booklet on Demerol hydrochloride (sent free on request). Prescriptions are subject to the regulations of the Federal Bureau of Narcotics.

Supplied for oral use, tablets of 50 mg., for injection ampuls of 2 cc (100 mg.).



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Brand of MEPERIDINE HYDROCHLORIDE  
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[Continued from page 2618]

American Cancer Society, was made to Dr. Spencer by Dr. Frank E. Adair, the Society's president, at the eighteenth annual dinner of the New York City Cancer Committee at the Cosmopolitan Club, 122 West 66th Street. Dr. John C. A. Gerster, chairman of the committee, presided, pointing out that the dinner launched the annual booth campaign conducted in New York November 1-15, for the dual purpose of spreading public knowledge of cancer, through more than one hundred booths set up at strategic locations in the city, and collecting funds for the committee's \$100,000 annual budget. According to vital statistics nearly 40 people a day die from cancer in New York City alone, Dr. Gerster said.

For the purpose of national organization, Dr. Spencer suggested that "special cooperative committees" be selected from members of the various cancer research foundations, from the American Cancer Society, the American Association for Cancer Research, the National Cancer Foundation, and other institutions that are actively engaged in cancer control, prevention, or therapy.

"The National Cancer Institute desires to accept its share of this responsibility," Dr. Spencer said.

"Preventive medicine is rapidly becoming an ever-increasing factor in modern practice, and health education is the very soul of prevention. We see clearly that while research and the acquisition of new knowledge about cancer are essential, such knowledge must continually be shared. There is always a cultural lag between new knowledge and its application. The taxpayer has the right, not the privilege, to be kept informed.

"Under the provisions of the National Cancer Institute Act, the dissemination of 'information through the appropriate publications for the benefit of health agencies and organizations, physicians, and any other scientists and for the information of the general public' is a mandated responsibility of which we cannot divest ourselves. However, health education is only a part of our program. We are interested in promoting *all* phases of cancer control, prevention, and therapy—the education of the public, the education of physicians, which includes the setting up of full-time departments of oncology or cancer biology in medical schools, the establish-

ment of preventive clinics, the provision of adequate diagnostic service, the cooperation with states in developing cancer control divisions within the framework of state departments of health, and the continuation of organized research into the causes, the diagnosis, the prevention, and the treatment of cancer."

The citation from the award committee, of which Mrs. Robert G. Mead is chairman, accompanying the medal stated:

"The Committee has, by unanimous vote, elected you as the recipient of the medal for 1944, because of the outstanding services you have rendered to the movement for cancer control. By virtue of the very office that you hold as chief of the National Cancer Institute your influence is far-reaching, and your contribution during the past year in articles written for the layman has without doubt greatly aided in the educational work of cancer control, for which this award is given. Your most recent effort to aid the work of the newly formed organization, The National Foundation for the Care of Advanced Cancer Patients, all seem to make you worthy in some measure of our recognition."

The award was established in 1937. The first recipient was Henry Luce, editor of *Time*. Others who have been honored in past years include Mlle. Eve Curie, Dr. Elise S. L'Esperance, and Dr. Frederick L. Hoffman.

Dr. Spencer has been chief of the National Cancer Institute since 1943, having served as assistant chief since 1938. The Institute was founded by act of the Seventy-fifth Congress in 1937, when a sum of \$750,000 was appropriated from the public treasury for the erection of a building and an annual appropriation of \$700,000 was authorized. Dr. Spencer received the gold medal of the American Medical Association in 1930 for his discovery of a preventive vaccine against Rocky Mountain spotted fever.

In a statement read at the dinner, Dr. Thomas Parran, Surgeon General of the U.S. Public Health Service, declared:

"Tonight, in awarding D. Spencer the Clement Cleveland medal, you have honored a great scientist and a great teacher who has never lost sight of the fact that science is an abstraction until it becomes the servant of the people."

### New Army Statement on Requirement and Use of Physicians

THE requirements of the Surgeon General to maintain the established strength of Medical Corps officers on active duty will be met through the appointment of medical ASTP trainees and medical students holding inactive commissions in the Medical Administrative Corps and by calling to active duty Medical Corps officers who are on inactive status for further training as interns, junior residents, or senior residents at nonmilitary hospitals.

Accordingly, appointments in the Medical Corps, Army of the United States, will not be made direct from civil life except for assignment to active duty with the Veterans Administration.

All appointments resulting from applications

processed in accordance with this directive will be in the Medical Corps, AUS, for assignment to duty with the Veterans Administration only. Every effort must be made to persuade candidates whose applications are processed under these instructions to accept this appointment.

Recalcitrant physicians, including interns and residents, will not be reported to Selective Service.

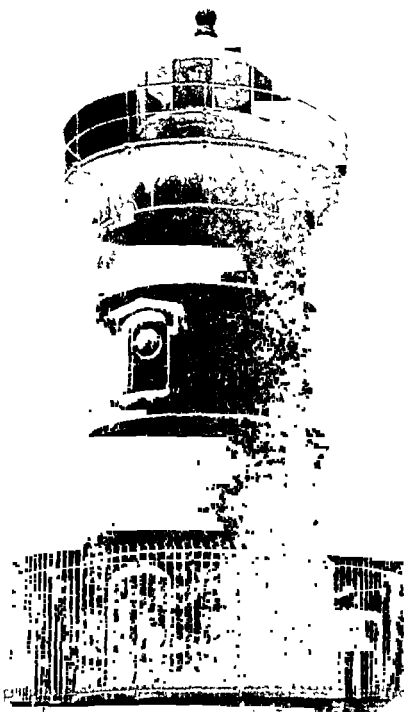
Qualified candidates who of their own volition may apply for commission in the Medical Corps and who cannot be processed under these instructions will be advised that a great need exists within the Navy and Public Health Service and will be urged to contact the appropriate offices for information regarding these services.

### Navy, U.S.P.H.S., and Veterans' Administration Still Need Physicians

PAUL V. McNUTT, chairman of the War Manpower Commission, announces that he has been informed by the War Department that recruitment of civilian physicians for the Army has been dis-

continued. At the same time he announces that recruitment for the Navy must continue, since it has urgent need for approximately 3,000 additional

[Continued on page 2622]



*with Confidence*

Through all the years, the name Koromex has always stood for dependability. Koromex Jelly today has attained its highest spermicidal effectiveness. Koromex Cream (also known as H-R Emulsion Cream) is equally effective, and is offered as an aesthetic alternative to meet the physiological variants. Prescribe Koromex with confidence. Write for literature.

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[Continued from page 2620]

medical officers. The U.S. Public Health Service and the Veterans Administration are also continuing to recruit physicians, Mr. McNutt said.

Vice Admiral Ross T. McIntire, chief of the Bureau of Medicine and Surgery, U.S. Navy, informed Mr. McNutt that personnel expansion and intensification of operations in the Pacific have precipitated a grave shortage of medical officers.

"With less than 13,000 medical officers on active duty in the Navy, the procurement of at least 3,000 more as soon as possible is imperative," said Admiral McIntire. "Even this figure will not meet actual needs but would ease the emergency that now exists; physicians and surgeons whose availability has been or may hereafter be certified by the Procurement and Assignment Service, WMC, should lose no time in obtaining particulars for commissions in the Navy Medical Corps by communicating with their nearest office of Naval Officer Procurement."

Mr. McNutt said he had been informed that the Army will fill its future requirements for military physicians from sources now available to the Army and thereafter will not require certification of availability of additional physicians from the Procurement and Assignment Service of the War Manpower Commission. There are now about 47,500 physicians on duty as medical corps officers of the Army. This probably includes those serving with the Veterans Administration and other governmental agencies to which the Army Medical Corps assigns its medical corps officers.

Mr. McNutt said that there are at present roughly 60,000 physicians in the armed forces and the Veterans Administration. The total number of physicians in the armed forces represents approximately 40 per cent of the active medical profession of the United States.

In addition to the 3,000 medical officers needed at present by the Navy, the Public Health Service has

need for approximately 300 for the U.S. Coast Guard and other agencies.

In informing Mr. McNutt of the termination of the Army recruiting of physicians except for the occasional specialist, Maj. Gen. Norman T. Kirk, Surgeon General of the Army, said, "The large number of physicians now in the Army volunteered for commissions without regard for their personal interests. The U.S. Army Medical Department is appreciative of the fine service they have given. Their removal from their usual practice also represents a sacrifice on the part of all civilians, who have had to get along with less medical care than they obtained in peacetime."

The Veterans Administration has, and will continue throughout the duration of the war emergency to have, assigned to it medical officers in the Army and the U.S. Naval Reserve to care for the needs of the casualties in its charge, the War Manpower Commission said. Doctors whose applications are at present in process for appointment in the Army Medical Corps will be considered for appointment and assignment to duty with the Veterans Administration, the War Manpower Commission statement added.

Mr. McNutt said that the War Manpower Commission joins with the directing board of its Procurement and Assignment Service and the War Department and the Office of the Surgeon General in expressing appreciation of the sacrifice involved in cooperation that was necessary on the part of physicians and the public before the Army reached its present level of medical personnel.

Mr. McNutt also expressed the hope that additional civilian physicians will respond to the Navy's appeal for more doctors to apply for commissions. The needs of the U.S. Public Health Service and the Veterans Administration, he said, although much smaller than those of the Navy, are nevertheless important.—*J.A.M.A.*, Nov. 4, 1944

## Parran Appoints Head of Mental Hygiene Division

DR. THOMAS PARRAN, Surgeon General of the Public Health Service, Federal Security Agency, today announced the appointment of Dr. Robert H. Felix as medical director in charge of the Mental Hygiene Division in the Bureau of Medical Services, Public Health Service. Dr. Felix relieves Dr. Lawrence Kolb, who retired October 31.

Dr. Felix, who took charge of the Mental Hygiene Division on November 1, said that his first effort would be the development of a well-balanced program for the advancement of mental health in the United States.

"Such a program," he explained, "will require the coordinated effort of all organizations—both public and private—having an interest in the prevention and control of mental disease. Present needs for improvement in the control of mental disease include expansion of research and a nationwide extension of psychiatric services to apply the findings of research to the psychic problems of the people.

"More research in mental and nervous diseases is needed, both because of the magnitude of the problem in civilian and military groups, and because of the uncoordinated nature of existing knowledge on the causes, extent, treatment, and control of these most prevalent of disabling illnesses. A coordinated and expanded program would seek further knowledge on the fundamental causes of

mental disease; methods of early diagnosis; evaluation of existing technics in psychotherapy; and experimentation in new technics. Research also should throw further light on psychosomatic relationships in health and sickness.

"Application of existing knowledge and skills should be widely extended through an expansion of psychiatric services in State mental institutions and in other State and community organizations, whether public or private. The present supply of psychiatric personnel is too small to permit the provision of consultant services in all parts of the country. A first objective, therefore, is to stimulate more training of psychiatrists, psychiatric social workers, clinical psychologists, and psychiatric nurses and attendants. Training should be undertaken at the undergraduate level among professional students in order that coming generations of physicians, social workers, and nurses will have a general understanding of mental disease, psychosomatic relationships, and psychotherapy. Postgraduate training should be expanded for those who wish to make psychiatry and its related specialties their career."

Dr. Felix was born in Downs, Kansas, May 29, 1904. He received his degree in medicine at the University of Colorado in 1930, and interned at the Colorado General Hospital at Denver.

He was granted a two-year fellowship by the

[Continued on page 2624]

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[Continued from page 2622]

Commonwealth Fund and took this postgraduate training at the Colorado Psychiatric Hospital under Dr. Franklin R. Ebaugh.

Dr. Felix was commissioned in the regular corps of the Public Health Service in August, 1933, and was assigned to the Medical Center of the Bureau of Federal Prisons at Springfield, Missouri. The assignment was in line with the responsibility of the service for the provision of medical and psychiatric services in Federal penal and correctional institutions.

When he was transferred to the Public Health Service Hospital at Lexington, Kentucky in 1936, Dr. Felix was clinical director at Springfield. During his stay at Lexington he served as clinical director and later as executive officer of this institution for the medical and psychiatric rehabilita-

tion of narcotic drug addicts. In September, 1941, the service sent him to the Johns Hopkins University School of Public Health for one year of postgraduate work in public health administration, with emphasis on psychiatry. He received a master's degree at Johns Hopkins in June, 1942.

With the advent of war, Dr. Felix was sent in 1942 to the U.S. Coast Guard Academy at New London, Connecticut, where he developed and operated a mental hygiene service for Coast Guard cadets and applied psychologic and psychiatric tests in the selection of officer material.

Dr. Felix is a fellow of the American Medical Association, the American College of Physicians, the American Psychiatric Association; a member of the Association of Military Surgeons, and the Southern Psychiatric Association; and a past president of the Kentucky Psychiatric Association.

### American Physicians Art Association Announces Prize Contest

FOR the best art works by physicians memorializing the medical profession's "Courage and Devotion Beyond the Call of Duty" (in war and in peace), \$34,000 in War Bonds will be given as prizes.

This prize contest is open to any physician mem-

ber of the American Physicians Art Association, including medical officers in the armed forces of the United States and Canada.

Full information is available on request to the sponsor, Mead Johnson & Co., Evansville, Indiana, U.S.A.

### American College of Surgeons Expands Graduate Training Program

IN EXPANDING its program of graduate training in surgery to assure adequate opportunities for advanced training in surgery, particularly for recent medical graduates when they return from service with the armed forces, the American College of Surgeons has enlarged its headquarters staff in Chicago and announces the following new appointments effective immediately:

Maj. Gen. Charles R. Reynolds (MC, Retired), former Surgeon General of the U.S. Army, has been appointed Consultant in Graduate Training in Surgery. General Reynolds was in the Army from 1900 to 1939; served in the Philippine Insurrection; was Chief Surgeon of the Second Army, A.E.F., in the first World War; was Commandant of the Army Field Service Medical School, Carlisle, Pennsylvania, from 1923 to 1931; and was Surgeon General of the Army from 1935 to 1939. He has been Director of the tuberculosis control program of the Pennsylvania State Health Department for the past four years.

Dr. George H. Miller, formerly Dean of the Faculty of Medicine and Chairman and Professor of the Department, American University of Beirut, Lebanon, Syria, has been appointed Director of Educational Activities. Dr. Miller served in the U.S. Army Medical Corps, A.E.F., in 1918 and 1919; was associate professor of pharmacology and later associate professor of medicine of the State University of Iowa College of Medicine between 1922 and 1932; and was with the American University of Beirut from 1932 to 1944.

The Department of Graduate Training in Surgery is under the general direction of Dr. Malcolm T. MacEachern, chairman of the Administrative Board, working with that Board, and responsible to the Committee on Graduate Training in Surgery, of which Dr. Dallas B. Phemister, of Chicago, is chairman, and to the Board of Regents. In addition to General Reynolds and Dr. Miller, the staff of the department consists of Dr. Paul S. Ferguson, Director of Surveys, and three assistants who conduct the surveys, and the field representatives conducting the regular hospital standardization surveys under the direction of Dr. E. W. Williamson, Assistant Director of the College, who assist as required in the graduate training program. The latter is a development of the basic work of the College in stimulating the improvement of hospital service. Surveys of hospitals for graduate training in surgery have been conducted since 1937 by the College.

When the war ends in Europe, in order to satisfy the demands of men whose training in surgery was interrupted by war service, together with those of current medical graduates, sufficient opportunities should be ready to offer approved training to men who wish to become surgeons, Dr. MacEachern declares, adding that a competent surgeon, according to present-day ideas, requires a preparation of three or more years of systematic, supervised graduate training in general surgery or a surgical specialty, following a general internship and graduation from an acceptable medical school.

### American Urological Association Offers Award

THE American Urological Association is offering an annual award "not to exceed \$500" for an essay (or essays) on the result of some specific clinical or laboratory research in urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deems none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to

urologists who have been in such specific practice for not more than five years. All interested should write the Secretary for full particulars.

The selected essay (or essays) will appear on the program of the forthcoming June meeting of the American Urological Association.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 15, 1945.

[Continued on page 2626]

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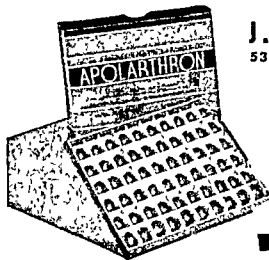
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# APOLARTHON

[Continued from page 2624]

## Transcriptions for Health Broadcasts

THE Bureau of Health Education of the American Medical Association offers a new service to county and state medical societies having difficulties in keeping up radio broadcasting to the public because of shortage of personnel. Scripts to be read by local doctors or used as a basis for new or rewritten material prepared locally have been available for many years and may still be had. In order, however, to meet the local personnel shortages, the Bureau has now prepared several series of electrically transcribed radio broadcasts available to state and county medical societies and auxiliaries or to local groups approved by the state or county medical societies.

These broadcasts may be used with a minimum of time-consuming local preparation and participation.

At the present time, four series are available for broadcasting to the public and one series for use in connection with health teaching in elementary schools. The blue circular that accompanies this Bulletin lists the series of broadcasts available and indicates the method of procuring them, namely, by borrowing complete sets from the Bureau of Health Education without expense to the local society except the nominal cost of shipping the records back when they have been used.

The distinction between the two types of transcriptions offered should be noted. The series in-

tended for broadcasting direct to the public are available on loan. One series entitled "Health Heroes" for use in schools is offered for sale only because it is necessary for a school to own these records in order to make the best use of them. The price is \$25 per set of 12 programs on six two-sided 16-inch records. In order to use them in schools, one of two arrangements must be made: (1) the school must have a central record-playing instrument with loudspeakers in classrooms or a portable record player; or (2) arrangements must be made with the local radio station to play these records at a convenient time, and radio receiving sets must be supplied to the classrooms. These teaching helps will fit in the curriculum. The scripts furnished enable the teacher to become familiar with the program in advance and thus make the best possible use of it in her teaching. Orders for these records should be accompanied by a remittance or official purchase order from the local board of education. Local medical societies or auxiliaries might wish to purchase sets of these records for presentation to the schools as an act of cooperation and evidence of good will.

These electrically transcribed recordings must be used on broadcasting-type turntables or record players revolving at 33 revolutions per minute; they cannot be played on home-type phonographs which revolve at 78 revolutions per minute.

## Pennsylvania Public Relations Council Publishes First Annual Report

THE Council on Medical Service and Public Relations of the Medical Society of the State of Pennsylvania has published its first annual report, for the year 1943-1944.

Among the subjects reported on are the work of the Medical Service Association of Pennsylvania and the Emergency Maternity and Infant Care Program.

## County News

### Albany County

Miss Marion Sheehan, director of the State Division of Public Health Nursing, has been named secretary of the New York State Temporary Commission on Medical Care.\*

### Bronx County

The regular monthly meeting of the county society was held at Burnside Manor on November 15 at 8:30 p.m.

Two papers on the role of penicillin were presented. Dr. Max Weiss spoke on its use in medical conditions, and Dr. Edward R. Cuncliffe's phase of the subject was the use of the drug in surgical conditions. Dr. Emil Koffler discussed Dr. Weiss' paper and Dr. Thomas M. Brennan discussed the paper by Dr. Cuncliffe. A general discussion followed.

All members of the county society have been asked to fill in a questionnaire on health insurance. The statistics gathered from the answers will be used as criteria on medical insurance problems.

The Bronx Gynecological and Obstetrical Society held a meeting on October 27. Dr. Abraham B. Tamis gave a case report on "Persistent Brow Presentation," which was followed by one entitled

"Persistent Mentoposterior Position—Pomeroy Maneuver," by Dr. Jacob Clahr. Dr. A. Charles Posner and Dr. Irving J. Kushner presented a paper, "Craniotomy—A Review of the Cases at the Bronx Hospital." Discussion was by Dr. Meyer Rosensohn.

Dr. David I. Bassett gave a case report on "Optic Neuritis and Sinusitis" at the November 28 meeting of the Bronx Otolaryngological Society. Dr. William Silverstein discussed the report.

### Broome County

The regular monthly meeting of the county society was held November 14 in the auditorium of the Binghamton City Hospital at 8:30 p.m. The scientific program consisted of a lecture entitled "Clinical Evaluation of Thiouracil in the Treatment of Hyperthyroidism," by Dr. Maurice J. Whitelaw.

### Dutchess County

A regular meeting of the county society was held in the pavilion of the Hudson River State Hospital, Poughkeepsie, November 8 at 8:00 p.m. The scientific session featured an address on "Traumatic Surgery" by Dr. John J. Moorhead, professor of surgery, Post-Graduate Medical School, and Chief of Surgery, Post-Graduate Hospital, New York City.

\* Asterisk indicates that item is from a local newspaper.

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### THE CIVILIAN DOCTOR'S RESPONSIBILITY

The physicians of the United States have an enviable record in the war. Those in the armed forces both by their quality and by their numbers have cooperated in the finest program of medical care ever developed for any army or navy. More than 55,000 physicians left their civilian positions, and those who remained at home took over most of the medical care that had been previously given by those entering the service. Theirs too has been a tremendous, physician is caring for thousands of people gone from each portion of the young men and women. Those who remained those who were not physically qualified and therefore required more attention per capita than the group cared for by physicians prior to the war.

This load has resulted in an increase in morbidity and mortality in the medical profession. While some advantages, particularly increased income, accrued to these physicians, they have shortened their lives and impaired their health in meeting this extra task.

At present only a sufficient number of physicians remain in civil life to meet the needs of the civilian population, provided they are properly distributed.

In an attempt to aid such proper distribution, the Procurement and Assignment Service of the War Manpower Commission limited recruiting in certain states and facilitated over three thousand three hundred relocations. However, perhaps as a result of what seems to be the impending end of conflict, a tendency has developed on the part of some physicians to move into other areas of practice or to enter postgraduate or other special training rather than to remain in their present essential job of meeting the needs of the community that depends on them for medical care.

The medical profession itself requested that a federal agency be set up by which the members could voluntarily supply the armed forces with necessary medical care and as a part of that federal program to continue minimal adequate care for the civilian population. The number of physicians considered essential in the second and third years of the war was set for its attainment. Each physician who is in an essential position should remain in that capacity until present shortages of physicians can be relieved. The excellent record of the medical profession both in peace and in war should not be marred by any sudden exodus at this time to meet the call of greener interesting fields or more lucrative pastures.—*Editorial, J.A.M.S., Aug. 19, 1944*

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[Continued from page 2626]

### Greater New York

The Greater New York Dental Meeting will hold its twentieth annual session December 4-8 at the Hotel Pennsylvania in New York City.

### Jefferson County

The annual meeting of the county society was held on November 9 at the Black River Valley Club. Dinner, at 6:30 P.M., was followed by a scientific program—"Glaucoma," by Dr. Walter Atkinson.

At the meeting the following officers were elected for 1945:

Dr. Harlow G. Farmer, Watertown, president; Dr. Sumner E. Douglas, of Adams, vice-president; Dr. Lawrence E. Henderson, of Watertown, treasurer; Dr. Charles A. Prudhon, of Watertown, secretary; and censors, Drs. Leon L. Sampson, of Alexandria Bay, Sutherland E. Simpson, of Watertown, Earl E. Babcock, of Adams Center, Frederick R. Calkins, of Watertown, and Harold L. Cokey, of Alexandria Bay. The committee chairmen will be reported later.

### Nassau County

A campaign of education on cancer to reach every man, woman, and child in Nassau County will be undertaken during the coming year by the Nassau County Cancer Committee, it was revealed at the first fall meeting of the educational advisory committee of that organization. A mail campaign to raise \$25,000 in funds for the purpose began on November 1.

The Rev. Joseph A. Smith, of West Hempstead, chairman of the advisory committee and a director of the parent committee, presided over the meeting, which was attended by twenty-three representatives of county-wide organizations.

A cancer study outline, prepared by Nassau County educators and physicians, now in use in the Nassau schools, has been taken over by the American Cancer Society for nation-wide distribution.\*

### New York County

Dr. A. J. Ginsberg, a member of the county society, was the first practicing physician to receive the Army-Navy E award, according to announcement made in New York. At a ceremony at the St. Moritz Hotel October 25, the presentation was made for the Army by Col. Edgar W. Garbisch, Corps of Engineers, District Engineer, New York district, and for the Navy by Lt. Comdr. John D. Cassidy, USNR, Third Naval district. Dr. Ginsberg received the award for himself and the Q.O.S. Corporation, of which he is both president and active member. The corporation has, since before Pearl Harbor, been making binocular stereoscopes for all branches of the service to use in reconnaissance. The excellence of the binocular stereoscopes has caused them to be used on all battlefronts in detecting enemy camouflage, in making maps, etc. Dr. Ginsberg, who four years ago had a large short-wave therapy exhibit at the Academy of Medicine, maintains an active practice in addition to his corporation activities.

Sister Elizabeth Kenny, Australian nurse-discoverer of the Kenny treatment for poliomyelitis, arrived in New York City October 24 as the guest of one of the city's newspapers and on the invitation of the Division of Communicable Diseases of the

New York State Health Department. She brought with her a film to be shown to medical men here depicting case histories of infantile paralysis patients treated by the Kenny method. The film, which it took four years to make, was shown to organized groups of medical men of the city.

The Clinical Society of the New York Diabetes Association has been organized with the following officers: Drs. John J. Weber, Brooklyn, chairman; Louis Bauman, New York, first vice-chairman; Edmund L. Shlevin, Brooklyn, second vice-chairman, and Harry G. Jacobi, New York, secretary-treasurer. The society is functioning under the auspices of the parent organization and is somewhat of an outgrowth of the clinics committee, which has now been dissolved. The society will consist of fellows, associate fellows, and members. A carefully selected founding group of specialists in diabetes will constitute the nucleus of the fellowship; this group will formulate standards for subsequent admission to fellowship and associate fellowship and will be the sole body which votes in future fellows. The board of directors of the New York Diabetes Association wishes to establish a representative founding group from among the specialists in the five boroughs and has appointed a nominating committee to examine credentials and to make recommendations. The new society will take over the establishing of standards for diabetes clinics in New York City and the vicinity. It will aim to bring about general adoption of these standards and for this purpose will recommend to the parent organization certification of individual hospital clinics adequately meeting its prescribed standards, as well as withdrawal of certification on delinquency. It will initiate, conduct, and publish statistical surveys on the basis of data derived from certified clinics. It will promote constructive relationships between physicians who are specialists in diabetes and representative physicians of allied medical specialties, such as ophthalmologists and surgeons, who will selectively be admitted to the fellowship. It will have contact with related technical groups such as dietitians, laboratory technicians, nurses and social workers through the "member" category. It will by close mutual association promote scientific understanding and conquest of problems in the management of diabetes, especially as these are encountered in clinical practice. The inaugural meeting was held at the University Club, October 26.

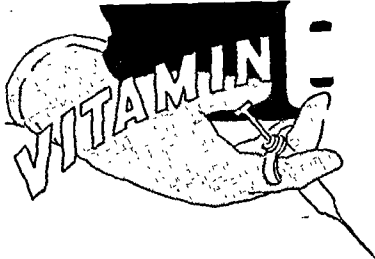
Details of a \$9,000,000 medical and research project jointly sponsored by the City of New York and Columbia Presbyterian Medical Center, which would include elaborate facilities for dealing with baffling tropical-disease problems arising from the global war, were disclosed yesterday by city authorities and officials of Columbia University.

Of the threefold project, involving proposed addition of three separate new building units to Medical Center, the two which have not been heretofore revealed in detail are a tropical-disease hospital and laboratories and a public health institute for teaching and research.

The third unit is the Nightingale Hospital, a cancer clinic, which was in the early stages of construction at Fort Washington Avenue and 163rd Street when the war intervened.

The consolidated program is designed to provide a center for research and teaching in fields where

[Continued on page 2630]



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[Continued from page 2628]

present facilities are greatly inadequate. Its benefits will be offered to the entire nation, if not the world. Actual construction of the physical plant is partly contingent upon anticipated Federal funds which would come from postwar public works appropriations.

Dean Willard C. Rappleye, of the Columbia University School of Medicine, said it would be "one of the greatest centers of its kind in the world."\*

The November 3 issue of *Better Times*, official publication of the Welfare Council of New York City, is given over to a review of progress in public health work in New York City since the turn of the century, and to a preview of the major health problems yet to be met. It is dedicated to Bailey B. Burritt, known as the "father of the family health movement in New York City," who has retired as chairman of the executive council of the Community Service Society after thirty-one years of service.

Dr. Joseph Jordan Eller addressed the Waterbury, Connecticut, Medical Society at the Waterbury Club on Thursday, November 9, at 8:30 p.m. His subject was "Tumors of the Skin" (benign and malignant). The address was illustrated with lantern slides.

Capt. Ralph Schwartz, (MC), AUS, has been awarded the Silver Star for gallantry in action in Normandy, France, on July 29, 1944.

Comprehensive postwar plans for the development of a great medical-dental center in the Bellevue area by the New York University College of Medicine in cooperation with the City of New York and Bellevue Hospital were announced on October 26 at a dinner in the Hotel Roosevelt by Dr. Harry Woodburn Chase, chancellor of the university.

The dinner was in honor of Dr. Samuel A. Brown and Dr. George B. Wallace, senior faculty members of the N.Y.U. School of Medicine, each of whom was celebrating his seventieth birthday. Edward M. Bernecker, Commissioner of Hospitals; Bernard M. Baruch; and Dr. Donal Sheehan, acting dean of the N.Y.U. College of Medicine, addressed the audience of faculty members and alumni. Dr. Hervey C. Williamson, president of the college Alumni Association, presided.

The long-range plan as visualized by Dr. Chase would comprise three units:

1. A university hospital and diagnostic clinic which would offer all methods of modern diagnosis, together with inpatient facilities, to families of the middle-low income group, and placing the emphasis upon the maintenance of health and upon preventive medicine. It would be a center of co-ordination for all available medical services, including those of physicians; nurses, and social service workers.

2. An institute of medical sciences where the clinical departments of medicine can offer opportunities to younger men for study and research in specially important fields.

3. A medical library, hall of residence, and a large auditorium for postgraduate teaching to seat 500, "a place where the traditions of medicine can flourish and to which, after graduation, physicians can turn with pride for continued inspiration."\*

## Onondaga County

The November meeting of the county society and the Syracuse Academy of Medicine was held on November 14 at the University Club in Syracuse. Dr. Herbert H. Bauckus, of Buffalo, President of the Medical Society of the State of New York, spoke on "Medical Care Insurance—How to Make It Practical." The scientific address was presented by Dr. Paul C. Clark, of Syracuse. "The Treatment of Thyroid Disease with Thiouracil" was his subject.

At the October meeting Dr. Merrill C. Sosman, roentgenologist of Peter Bent Brigham Hospital of Boston, was the guest speaker. The title of his address was "Sarcoidosis, Erythema Nodosum, and Diseases Which Simulate Them."

## Putnam County

The county society has elected the following officers for 1944-1945: president, Dr. George H. Steacy, of Lake Mahopac; vice-president, Dr. Frank C. Genovese, of Patterson; secretary-treasurer, Dr. Garrett W. Vink, of Carmel.

## Queens County

Twenty-five years of combating tuberculosis in Queens was marked on November 20, at the annual meeting of the Queensboro Tuberculosis and Health Association, held at the Forest Hills Inn at 7:00 p.m.

Dr. James R. Reuling, president, gave a talk entitled "In Twenty-five Years," and Will Ross, president-elect of the National Tuberculosis Association, described "The Book with Too Many Pages." Percy H. Whiting, of the Dale Carnegie Institute, was toastmaster.

## Richmond County

How the United Medical Service plan for paying medical fees is a better solution to the present problems of society than the socialized medicine advocated by some organizations and individuals was described by Dr. Frederick Elliott at a meeting of the county society in the Richmond Health Center, St. George, on October 11.

Dr. D. V. Catalano, president, conducted the meeting.\*

## Schenectady County

The regular monthly meeting of the county society was held at the Ellis Hospital Library on November 7 at 8:30 p.m. The speaker was Dr. William Harvey Perkins, Dean of Jefferson Medical College, Philadelphia; his subject was "Host Types in Tuberculosis."

## Warren County

Dr. Morris Maslon, director of the Thomas H. Foulds Memorial Laboratory in Glens Falls Hospital, spoke on "Blood Plasma and Transfusion" at the institute for the public health nurses of Warren, Washington, and Saratoga counties on Friday morning, October 20.

During the afternoon session, Dr. R. F. Korn, New York State Department of Health, Division of Communicable Diseases, spoke on "Tropical Diseases." It was pointed out that New York State has no reason to fear an outbreak of any of the less common diseases with the return of servicemen. The transmission of diseases by mosquito, flies, lice, and rat fleas was emphasized, along with the newer findings for the elimination of this source of trans-

[Continued on page 2632]

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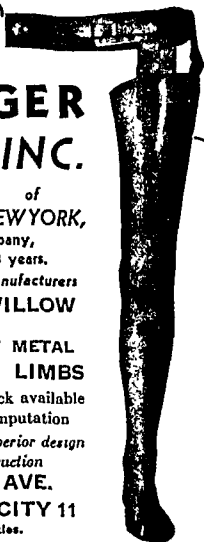
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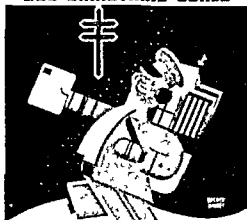
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[Continued from page 2630]

mission, plus the sanitary precautions being taken in the United States.

The newer developments in the field of communicable disease with the possibility of shortening the isolation period for patients with scarlet fever were considered.

School nurses from the three counties were present at the meeting as well as some of the Glens Falls Hospital nursing staff.\*

#### Westchester County

The one hundred forty-seventh annual meeting of the Medical Society of the County of Westchester was held at the New York Hospital, Westchester Division, White Plains, November 21 at 8:30 P.M.

The general topic of the meeting was: "The Future of Medicine in the United States." There was a panel presentation and discussion of this subject with Dr. Edward R. Cuniffe and Dr. Louis H. Bauer as the guest speakers and Drs. Adie, Archibald, Parsons, and Todd as discussants.

The outgoing and incoming presidents of the society delivered their retiring and inaugural addresses at this meeting.

The Westchester Cancer Committee is conducting its sixteenth annual appeal for funds to carry on its program of cancer control. This year the Committee is continuing its program of cancer education for the layman, and the further development of programs in cancer research already in progress under the direction of its Research Council and its Research Fellow, Dr. George Y. McClure.

Physicians are not asked to contribute to the work of the Committee or to canvass contributions from their patients, but if they have an opportunity to advise any of their patients or friends who happen to be in a position to contribute to this cause, it is hoped they will not fail to say a good word for the program. The names of the physician members, however, do not appear on the appeal sent to residents throughout the county.

The Westchester Cancer Committee is composed entirely of physicians except for the treasurer and legal counsel, who are a banker and a lawyer.

A round-table discussion of poliomyelitis was held at a special scientific meeting of the county society to be at New York Hospital, Westchester Division, on October 24.

Dr. Win H. Watters, orthopaedic surgeon at Grasslands Hospital and consulting orthopaedic surgeon at United Hospital, Port Chester, led the discussion, in which two guests, Dr. Nicholas S. Ransohoff, associate orthopaedic surgeon of the

Hospital for Joint Diseases, and Dr. Samuel Frant, epidemiologist and director of the Bureau of Preventable Disease of the New York City Health Department, participated.

Dr. Margaret Bashford, resident pediatrician at Grasslands Hospital, discussed the infantile paralysis epidemic in Westchester this year. Dr. F. Duncan Barnes, director of pediatrics at Grasslands and New Rochelle hospitals, discussed the diagnosis and early treatment of this disease. Dr. Donald R. Reed, attending pediatrician at Tarrytown, Dobbs Ferry, and Grasslands Hospitals, described unusual observations concerning incubation and contagion. Dr. William G. Grillo, anesthesiologist at Grasslands, told of new developments in meeting acute respiratory emergencies.\*

How the home and community can help the 500,000 victims of epilepsy in the United States adjust to their surroundings and lead normal, average lives, was described on October 23 by staff members of the Baird Foundation Clinic of Beth David Hospital, New York City, speaking at the Lincoln Park Jewish Center in Yonkers, through the courtesy of the Association for the Control of Epilepsy.

Joseph F. Stein, president of the center, is a director of the Baird Foundation and of the Association for the Control of Epilepsy.

Participants emphasized that the problem of epilepsy will be magnified in postwar years because of the frequency of seizures brought on by military head injuries.

Dr. Jerry C. Price, medical director of the clinic, and a staff member of the Neurological Institute, College of Physicians and Surgeons of Columbia University, told of strides made in development of medication in the last decade.

Harry Sand, administrator of the clinic and instructor of psychology at New York University, discussed the work of the clinic and the psychological aspects of treating and adjusting the epileptic patient to master his abilities. He pointed out that epilepsy has nearly the same incidence of occurrence as diabetes and active tuberculosis.

Dr. Kate Levine, psychologist at the clinic, formerly of Rockland State Hospital, described how the individual's behavior, emotional, and personality problems can be detected through tests and how these problems can be corrected.

The head of play therapy at the clinic, Miss Louise Wiener, cited specific cases in which the epileptic child had been helped to express himself and gain confidence.

Miss Lois Tompkins, social worker in charge of rehabilitation, described her contacts with families of epileptics. Also present were Miss Rosalind Finklestein, chief statistician of the clinic, and Mrs. Henry H. Benning, president of the Association for the Control of Epilepsy.\*

#### Deaths of New York State Physicians

Name	Age	Medical School	Date of Death	Residence
Vincent A. Ball	48	Buffalo	October 11	Tonawanda
Elliot T. Bush	64	Buffalo	October 12	Elmira
Myron E. Carmer	90	Vermont	November 6	Lyons
George L. Fischer	66	Buffalo	October 12	Buffalo
Morris Friedman	87	Balt. Med.	October 31	Brooklyn
Graeme M. Hammond	86	N.Y. Univ.	October 30	Manhattan
Jacob Kaufmann	84	Strassburg	October 13	Manhattan
Wyeth E. Ray	66	Yale	October 25	Manhattan
John A. Vietor	60	P. & S., N.Y.	October 31	Oyster Bay

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# Honor Roll

## Medical Society of the State of New York

### Member Physicians in the Armed Forces

(By County Societies)

#### Supplementary List\*

##### *Albany County*

MacQuigg, David E. (Lt.)

##### *Bronx County*

Hayward, Vincent S. (Capt.)

Weissberg, Jonas (Capt.)

##### *Chemung County*

Adler, Harry (Lt.)

##### *Delaware County*

Weinberg, Abraham

##### *Erie County*

Neuburger, Fredrick K. (Lt.)

Palmer, Milton A.

##### *Kings County*

Bernstein, Irving (Lt. Comdr.)

Howes, William E. (Lt. Comdr.)

##### *Monroe County*

Kammer, John W.

##### *Nassau County*

Millar, Russell A.

##### *New York County*

Hoen, Thomas I.

Labruier, Frederic J. (Capt.)

Zerner, Herbert (Lt. Comdr.)

##### *Niagara County*

Moran, Charles E.

##### *Ontario County*

Hirsch, Erich (Lt.)

##### *Orange County*

Osborne, John R.

##### *Rensselaer County*

Keenan, John J. (Lt.)

Messing, Kurt (Capt.)

##### *Suffolk County*

Willmott, Robert O. (Lt. Comdr.)

##### *Westchester County*

Fine, Seymour H. (Lt.)

\* This list is the twenty-seventh supplement to the Honor Roll published in the December 15, 1942, issue. Other supplements appeared in the January 1, January 15, February 15, March 1, March 15, April 15, June 1, July 1, August 1, September 1, October 15, November 15, December 15, 1943, January 15, February 1, February 15, March 1, May 1, May 15, June 1, July 1, July 15, August 1, September 1, October 1, and November 1, 1944, issues.—*Editor*

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1945

## ANNUAL MEETING

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The list will be closed on January 20, 1945.

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# Woman's Auxiliary

## To the Medical Society of the State of New York

### County News

**Broome County.** The Woman's Auxiliary of the Broome County Medical Society held its opening luncheon on October 7, in the Iron Fence tea-room.

Mrs. Manuel M. Monserrate, president, presided at the business session, at which plans for the year's activities were discussed and reports of the various committees were presented.

Mrs. Mark Williams, chairman of the committee on arrangements, was assisted by Mrs. C. R. Seymour, Mrs. Ronald L. Hamilton, Mrs. D. O. Chamberlain, Mrs. John Kane, Mrs. M. J. Whitelaw, Mrs.

William Ackroyd, Mrs. Carl Benson, and Mrs. Harold McNitt.

**Nassau County.** The regular meeting of the auxiliary was held in the Nassau Hospital Auditorium on Tuesday evening, October 31, at 8:15 p.m. The nurse recruitment program was the theme of the evening. The meeting was addressed by Mrs. Inez Johnson, Director of Nurse Recruitment for the Nassau County Chapter of the American Red Cross, who brought with her a nurse who has seen active service in one of the theaters of war. She told the auxiliary of some of her experiences.

### PAPER HOLIDAYS

"Paper holidays" are being declared in cities and towns throughout the country in an effort to stretch limited supplies of paper, the War Production Board announced on September 16. During the "paper holidays," retail merchants will use no bags or wrapping paper, except for articles that require wrapping for sanitary and protective purposes.

The W.P.B. Conservation and Salvage Divisions, in cooperation with the Periodical Publishers National Committee, will sponsor the "paper holidays."

The first "paper holiday" was held in Peoria, Illinois, early in July. Not only were large quantities of wrapping and packing materials saved during the holiday, but also paper salvage in Peoria increased 600 per cent as the public expanded its paper-consciousness. So successful was the Peoria drive that from a short-term holiday it was extended as a continuing program, officials said.

"Paper holidays" in other cities, based on the Peoria plan, may be declared for one week, one month, or for the duration. Even one day's curtailment in the use of paper will help, W.P.B. officials said. Howard Coonley, Director of the W.P.B. Conservation Division, stressed the need for stringent economies to conserve the nation's waning paper stockpiles. He said:

"Unlike many other wartime shortages, the paper problem shows no evidence of immediate solution even when the war in Europe ends. Enormous quantities of food, equipment, and medical supplies will still be needed overseas for our servicemen and for relief to distressed nations. All of these shipments require paper or paperboard for packaging."

Because some dealers still have stocks of packaging materials on hand, the public has not yet felt the pinch of shortages, officials said. With the ever-increasing paper needs for the armed services and essential home products, still further cuts must be anticipated in the near future, they added.

Harold Boeschstein, acting director of the W.P.B. Forest Products Bureau, commented:

"Military requirements of woodpulp for production of such products as explosives and high tenacity rayon for ties, as well as for overseas packaging and other uses, have reached the highest point of the war and are expected to step up in war theaters throughout the world.

"Substantial improvements in pulpwood production and waste paper collections during the first half of 1944 were not sufficient to balance the demands, despite further W.P.B. curtailments in supplies of paper for civilian uses."

Three groups of retailers—food, drug, and variety stores—throughout the nation have already signed a W.P.B. pledge to conserve bags and wrapping paper.

Now paper holidays provide a unique method of bringing all retailers in every community into the conservation campaign.

"If the 'paper holiday' has not come to your town, local merchants who are anxious to cooperate may secure a paper holiday kit containing detailed instructions and suggestions for organizing the campaign, from the Executive Secretary of their State Salvage Committee," the W.P.B. Conservation Division said.—*Release from the Office of War Information, September 16, 1944*

### ERADICATION OF TUBERCULOSIS

Our principal task now is to extend tuberculosis control activities so as to reach the greatest number of workers and their families in the shortest possible time, making full use of all private and public resources. With energetic use and concerted action, the final eradication of tuberculosis from the United States is well within our grasp.—*H. E. Hilleboe, M.D., and D. M. Gould, M.D., U.S.P.H.S., J.A.M.A., May 27, 1944*

### THE VICE OF THE VIRTUOUS

The peculiarity of ill-temper is that it is the vice of the virtuous. It is often the one blot on an otherwise noble character. You know men who are all but perfect, and women who would be entirely perfect, but for an easily ruffled, quick-tempered, or "touchy" disposition. This compatibility of ill-temper with high moral character is one of the strangest and saddest problems of ethics.—*Henry Drummond.—Reprinted from Illinois M. J.*

## BRAZILIAN SURGEON DOUBLES AS HEAD OF FINGERPRINTING BUREAU

Combining the talents of surgeon and police officer is a routine matter for Dr. Hubert Wallau, of Brazil, now in the United States to study traumatic surgery under the auspices of the Institute of Inter-American Affairs, an agency of the Office of Inter-American Affairs. Dr. Wallau is head of the Identification Division of his home state of Rio Grande do Sul, and in recent years has supervised the fingerprinting of more than 200,000 adults in the city of Porto Alegre alone.

According to Dr. Wallau, all adults in Brazil, whether citizens or foreigners, are required to carry identity cards issued by local or state police departments.

As a result, he has been called upon to direct the supervision of almost every adult in Rio Grande do Sul.

The identification system, he went on to say, has proved invaluable in his state in curbing crime and fighting espionage—Release from the Office of the Coordinator of Inter-American Affairs

## UNDETECTED PULMONARY TUBERCULOSIS

Pulmonary tuberculosis is present in a significant proportion of adult patients admitted to general hospitals and remains undetected during the hospital stay unless all patients receive routinely a chest x-ray examination. Such unrecognized tuberculosis is a hazard not only to the patients themselves but also to the hospital employees who may be exposed to it. One of the measures essential to the solution of this problem is routine chest x-ray examination of employees.

Although the discovery of tuberculosis among

importance. It is hoped, therefore, that hospitals, physicians, and others will give more recognition to the existence of this problem and to the need of a complete plan of action, including routine chest x-ray of all adult admissions as well as periodic examination of medical students, nurses and all other employees—N.Y. State Dept. of Health, Health News, May 8, 1944

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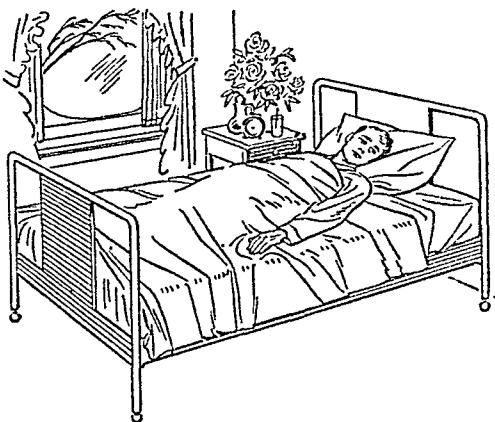
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# NEW YORK STATE JOURNAL OF MEDICINE

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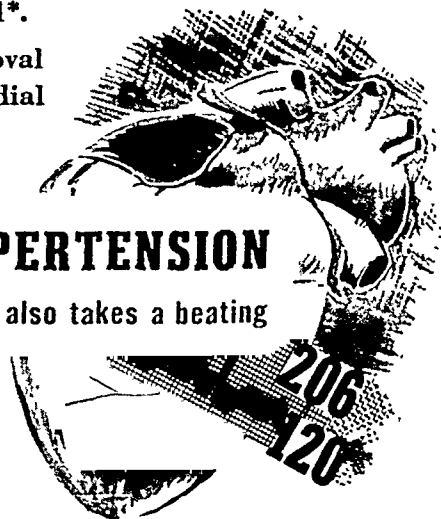
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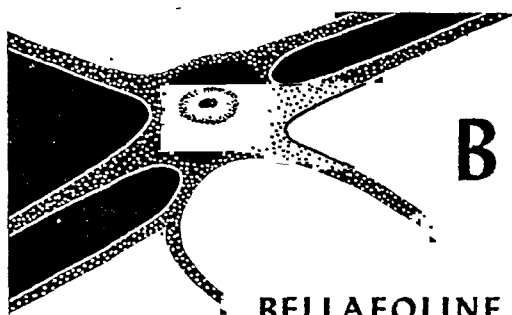
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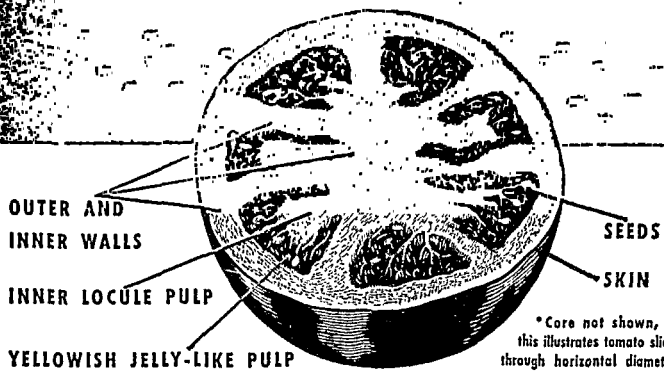
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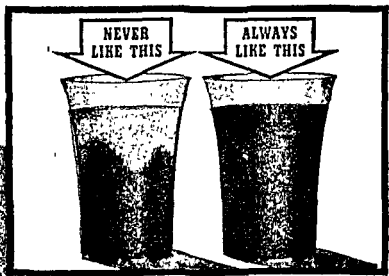
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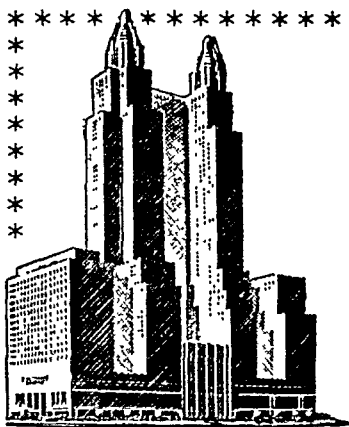


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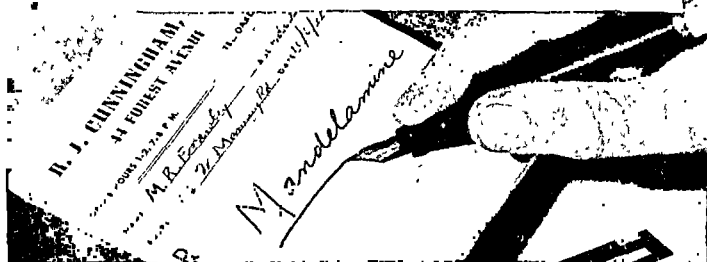
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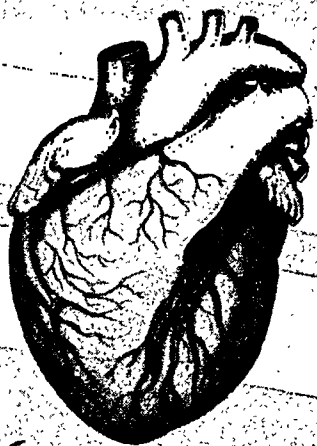
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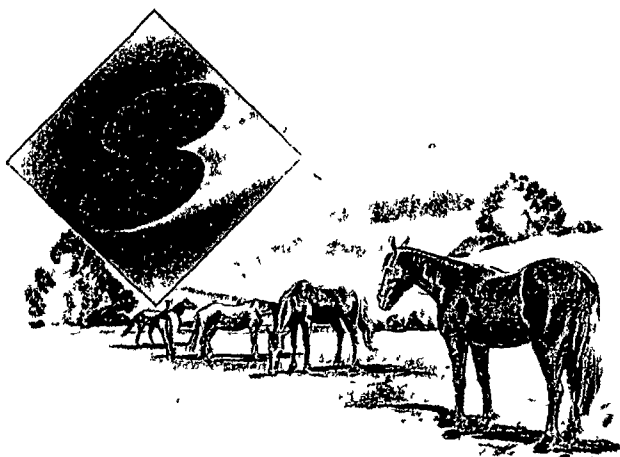
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**KONDREMUL**  
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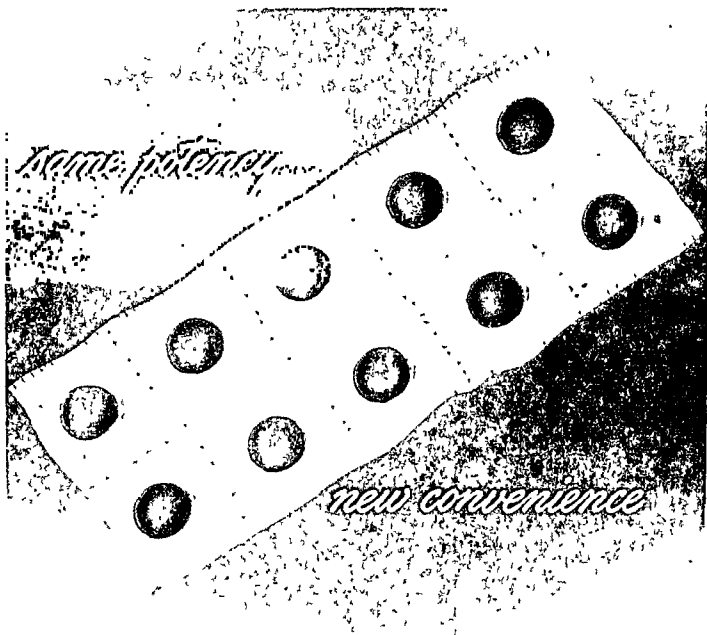
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—use of—  
**ALKALOL**

as a nasal douche is an assurance of clean  
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*This often means less liability to infection*

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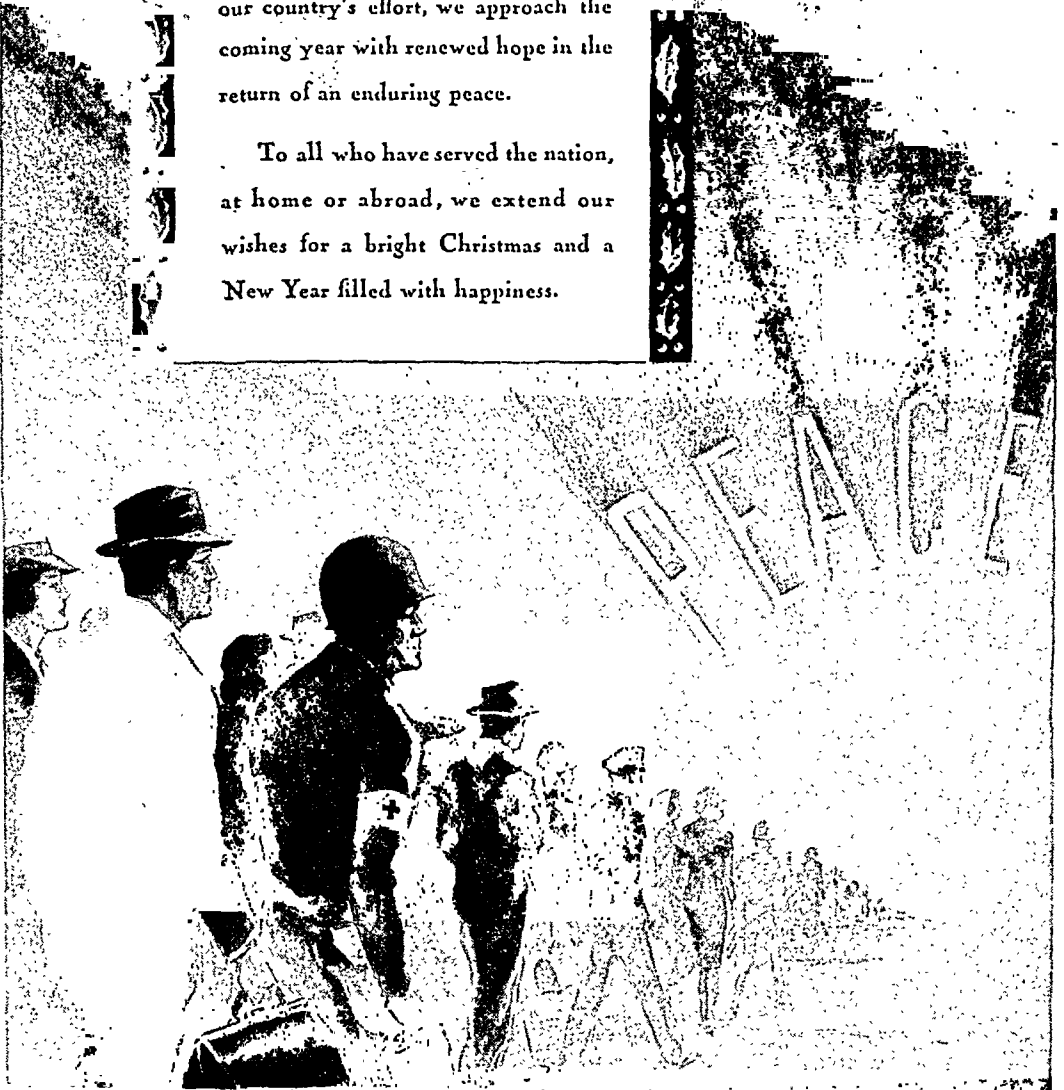
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*Arlington*

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COMPOSITION: Liver residue.....3 gr.,  
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### *Tablets*

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RICHMOND HILL



NEW YORK

\*Musser, John H., Internal Medicine, Lea and Febiger, Philadelphia, 3rd Edition, 1938, page 1048.

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### *Tablets*

# Announcing **Desenex**

## A *Specific* for the Superficial Fungous Infection **ATHLETE'S FOOT**

Desenex, a new development of the widespread war research, represents the successful therapeutic application of fatty acids for the treatment of this prevalent and stubborn condition.

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(with a vanishing-type base)  
ONE-OUNCE TUBES  
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**POWDER**

TWO-OUNCE SIFTER CARTONS



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• *The name is never abbreviated; and the product is not like any other infant food—withstanding a confusing similarity of names.*

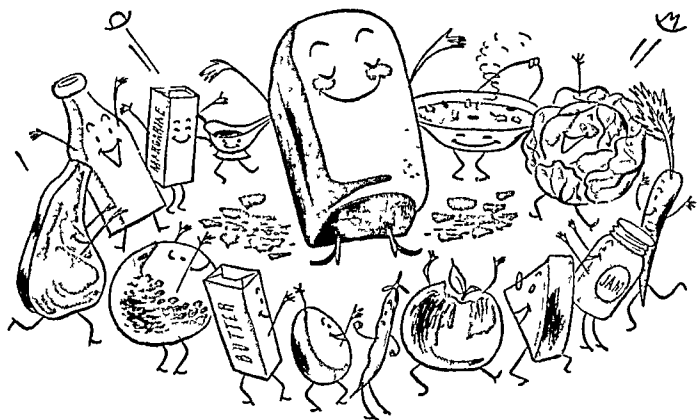
The fat of Similac has a physical and chemical composition that permits a fat retention comparable to that of breast milk fat (Holt, Tidwell & Kirk, *Acta Paediatrica*, Vol. XVI, 1933) . . . In Similac the proteins are rendered soluble to a point approximating the soluble proteins in human milk . . . Similac, like breast milk, has a consistently ZERO curd tension . . . The salt balance of Similac is strikingly like that of human milk (C. W. Martin, M. D., *New York State Journal of Medicine*, Sept. 1, 1932). *No other substitute resembles breast milk in all of these respects.*



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# The Good Companion

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*J. W. Harper*



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*since 1872*



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2. **BASIC THERAPY:** Thiamine, riboflavin, niacinamide, ascorbic acid, orally.
3. **ADDITIONAL MEDICATION:** Synthetic vitamins as indicated orally or parenterally.
4. **NATURAL B COMPLEX:** Brewers' Yeast or extract, or rice bran extract, and/or liver extract orally or parenterally.

They provide **BASIC FORMULA VITAMIN TABLETS** for intensive **BASIC THERAPY**—note their content:

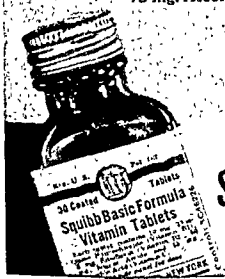
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This is the basic formula used by Drs. N. Jolliffe and T. D. Spies and described by the latter in his paper on Nutritional Rehabilitation of 100 American workers for Industry.

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## Squibb Basic Formula Vitamin Tablets



# Announcing

## INCREASED POTENCY

..For greater therapeutic effect

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CO., INC.**

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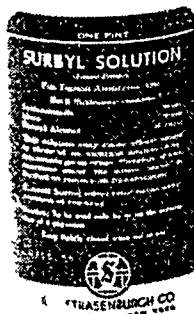


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**400 UNITS OF VITAMIN D<sub>3</sub>\*  
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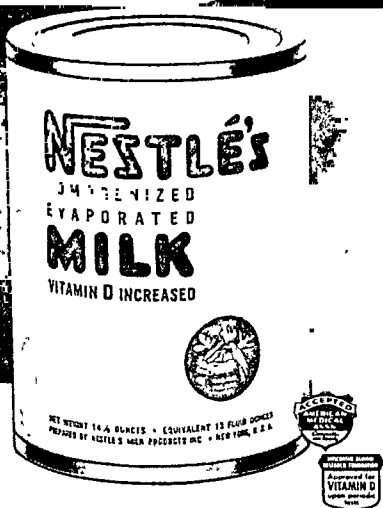
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# NEW YORK STATE JOURNAL OF MEDICINE

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VOLUME 44

DECEMBER 15, 1944

NUMBER 24

## Editorial

### A Presidential Message

*To the Members of the Medical Society of the State of New York:*

Based on the experience of the Western New York Medical Plan, whose progress I have watched since its inception, I have reached certain conclusions about what features a medical prepayment insurance plan should have.

I believe that the best plan consists of surgical and obstetrical coverage with a "rider" providing for medical care for those who want it and are willing to pay the added cost. All of this should be on the indemnity principle.

It has not been found practical to have a clause calling for co-insurance or deductible qualifications. The Western New York Plan found that requiring a patient to pay for the first call did not reduce unnecessary calls after the first few calls. Furthermore, such stipulations are a hindrance to good medicine and to preventive care.

There should be no wage ceiling for those wishing to subscribe to a plan. Medical insurance should be regarded as by no means

complete protection but as a contribution to the cost. If it covers most of the cost, it has made an important contribution. Without a ceiling, there is no class discrimination and all get the same service. This is the policy in the sale of voluntary hospital insurance plans.

It is impossible to enforce the requirement of a wage ceiling. In practice no real investigation is made, and if an investigation is made the patient will resent what he considers an intrusion into his private affairs. Often, too, the physician feels that the patient is earning above the ceiling and that he ought to pay more. The result is that any ceiling breeds distrust on the part of both the doctor and the patient.

When there is no wage ceiling requirement, the insurance element changes the physician-patient relationship very little. Since the plan is understood to be merely a contribution to indemnify the patient, there is less objection than is the case when the physician informs him that owing to his being above a certain income status, the charge will be the regular fee instead of the lower

rate set up for those in the lower income brackets.

It is generally conceded that the fee schedule for the low-income group should be that of the Workmen's Compensation Schedule. Few doctors would think of charging more than the rates on this schedule to a person earning \$2,000. The physician is in the best possible position to know what the patient is really able to pay. It is best neither to take from him his right to fix the fee nor his obligation to make it reasonable. When he is visited by a person well able to pay his full fee, he should let him know before the services are rendered that the insurance coverage will not compensate him in full. Complete service plans mean eventually that the physician will receive substandard pay and in the end substandard service will result.

The indemnity contract has written in it the schedule of fees to be paid the doctor by the insurance plan. The bill for the entire service is sent by the physician to the offices of the indemnity plan and the part of the fee which has been stipulated is paid to the physician. If there is a charge additional to this, the executives of the plan notify the patient of this fact. This operates as a check.

Limitations, such as for pre-existing diseases, must, of course, be made in the contracts. One form of good contract gives unlimited surgical and medical care *in the hospital*, within range of the Workmen's Compensation Schedule, with an allowance of \$50 for obstetrics, the balance to be paid by the subscribers. (This does not provide

for specialists' services.) Most plans make the greatest use of the general practitioner with greater limitation on specialists' services calling for higher fees.

It is possible to offer such coverage, including 30 house or office calls per year for the subscriber and 15 for each dependent to the family, for \$36 a year. The same coverage can be provided for a single individual for \$15 a year.

In addition to the coverage specified above, this contract does make certain specific allowances for specialists' services. For instance, for any one disability a maximum benefit of \$5.00 is allowed for consultation with a specialist an equal sum for a special examination. Also, during one year each subscriber and his dependents are allowed a sum of \$10 for each of a number of special medical services, such as diagnostic x-ray service and physiotherapy. Such a limitation of specialist service was found necessary when, for example, under the Western New York Plan's old contract, it was found that everybody with throat trouble wanted a specialist and every woman wished her children to go to a pediatrician. This entailed considerable increase in cost and could not be afforded at the premium rate offered.

One word of caution is necessary. It is natural that from year to year certain modifications of the contract have to be made. This can be done only if every contract expires at the end of a year and is renewed at that time.

HERBERT H. BAUCKUS, *President*

## Recent Events

In view of the emphasis upon the insurance approach to the problem of the cost of illness, the experience of Rhode Island with its "Cash Sickness Fund" will be of interest. Says the *Rhode Island Medical Journal*<sup>1</sup> editorially:

"With more than a year's experience the State Cash Sickness Fund is now in a position to be more clearly evaluated as a factor in the social security program for the people of Rhode Island.

"Recently the Unemployment Compensation Board administering the sickness fund reported that for a period of five months—April through

August—the fund had paid out about \$100,000 more a month in benefits than it had taken in through payroll deductions in the same period. . . ."

The public press of the state, when this fact was announced, called for an investigation raising the question whether there might be connivance between unscrupulous workers and doctors of easy conscience to account for the cost. The *Rhode Island Journal* feels that in the lay mind doctors are thought of as physicians and must be willing to accept the onus of criticism when the matter of certification for illness is in

question For it is by such certification that benefits from the State Sickness Fund are gained by insured persons This procedure is common to all insurance plans and is an additional reason why such plans need the active cooperation of medical men having the highest degree of personal probity, the first reason being professional competence based on good medical education and thorough training In this instance, however,

"It should be carefully noted that the broadness of the definition in the Fund Act of sickness, and the too liberal attitude of the General Assembly through the years in allowing the title of 'Doctor' to be used without any explanatory degree, permit anyone short of a doctor of philosophy to attest certification for workers' benefits

"Our leading newspaper calls editorially for an investigation, presumably only of the recent increase in expenditures for benefits We call for a review of the entire program, possibly by such a group as the State Advisory Council on Health appointed by the Governor earlier this year to " clarify the extent to which the people wish to compensate themselves for loss of employment due to sickness by a better interpretation of the definition of illness in this particular act Such a review might establish a means by which the entire program may be more clearly interpreted to the people in terms of social protection Such a review might better advise the General Assembly in its decision on amendments proposed by the administering board or other reputable authorities

"Basically the sickness-act program is one of social relief and not of insurance for too many incalculable variables constantly enter into the problem to make sickness determinable in advance It is upon the law of probability of regular recurrence of events when great numbers of those events

contrary, the dominant motive in the establishment of every system of health or sickness insurance is the relief of poverty, not the preservation of the public health "

This observation is particularly apt at this time It is to be anticipated that further efforts will be made by the Administration to push its compulsory "health" insurance legislation, in spite of the fact that voluntary prepayment plans are everywhere getting under way in a real attempt to underwrite sickness As to sickness compensation the *Rhode Island Journal* comments further

"The medical profession of this State, however, has committed itself to the support of cash sickness

compensation to offset the loss of income of the wage earner due to his illness

"But the sickness compensation program belongs to the people, not to the State, nor the medical profession, nor any other group licensed to practice the healing art And to the people must be presented the complete problem

"There has been too little clear thinking on the distinction between the financial, economic, administrative, and health phases of the act As we have stated, the Fund is not aimed at the preservation of health Yet it involves all those who profess to the healing art by reason of the certification of the sickness of the claimant Thus the onus is placed upon the doctor, who must not only fulfill his primary professional responsibility for adequate diagnosis and treatment of his patient but who must also serve the State as a guardian of the financial status of the group

"The insured individual naturally wishes a generous benefit in his particular case Because sickness is not clearly definable by law, and as it is defined by insurance laws it is not identical with sickness as regulated by medical science, the doctor will naturally have a tendency to certify an applicant for cash benefits that may not be permitted under tightly construed legal qualifications

"Therefore, in not submerging his natural relationship to the patient so as to administer stringently the economic phases of the law the doctor by no means indicates opposition to the program, nor a lack of cooperation He merely acts in time-honored manner, and as the people—his patients—require He knows that any tendency to accede to the patient's demand for certification in excess of that which sound insurance law and a reasonable premium permit, involves the necessity from the administrator's viewpoint of controls to protect the fund He knows, too, that the problem of medical certification is inherent and must be dealt with so as to minimize difficulties

"Simons and Sinai point out in *The Way of Health Insurance* that 'the most startling fact about the vital statistics of insurance countries is the steady and fairly rapid increase in the number of days the average person is sick annually and the continuously increasing duration of such sickness Various studies in the United States seem to show that the average recorded sickness per individual is from seven to nine days per year It is nearly twice that amount among the insured population of Great Britain and Germany, and has practically doubled in both countries since the installation of insurance '"

We feel that comment of this kind cannot be too frequently brought to the attention of our membership The problem of medical certification is indeed the *sine qua non* of all insurance and must be faced realistically whether we contemplate government "health" insurance or any other plan As more insurance of this kind is written the problem will become more widespread



and the medical profession as a matter of course must be prepared to face charges of collusion and other fraudulent practices as an inevitable sequel.

The participation in the plans of as many

reputable physicians as possible, is the best security for the insured as well as the best answer to possible charges of abuse of insurance funds.

<sup>1</sup> October, 1944.

### Acute Osteomyelitis—Closed Treatment

In bygone years acute osteomyelitis was treated surgically as soon as the diagnosis was made, and the infected area was widely explored. In contradistinction to this older viewpoint, which still exists in many quarters,<sup>1,2</sup> a new school has risen which has adopted dilatory tactics.<sup>2</sup> In their hands a trial period of five to ten days is made, during which it is hoped the bone infection may localize, and then can be drained with greater ease and safety and better conservation of the bone. The advent of remarkable therapeutic agents, such as penicillin and the sulfa drugs, has led to further modification of the treatment of acute osteomyelitis so that its threat as a surgical emergency is waning.

The modern objective in overcoming infection is the destruction of the causative agent. The secondary injury caused by the invading organism can then be best repaired. Acute osteomyelitis is a disease which readily lends itself to these principles, for it is a general infection with localization in bone, caused most commonly by the staphylococcus aureus, or other cocci which are amenable to specific therapy. A group of surgeons<sup>3</sup> has subjected a series of patients with acute osteomyelitis to this medical point of view with unorthodox results. Supportive measures such as transfusion, infusions, serum, and vitamin and dietotherapy were also liberally used. Fifty-six patients were treated under this regime, with surgical intervention as a major

variation. Thirty underwent incision and drainage operations in the customary fashion, and 26 were treated without drainage but had aspiration, largely for diagnostic purposes. Twenty-one of 30 patients treated by drainage had lingering, draining sinuses, while but 9 had healed completely. Of the 26 cases treated medically 21 healed without sinus formation. There was only one death in the entire group. It is clear that the morbidity can be reduced if surgical drainage is not universally employed in the treatment of acute osteomyelitis.

Acute osteomyelitis is undergoing constant therapeutic revision, as are all diseases whose causative agent is susceptible to the action of penicillin and sulfa drugs. It may well be that the early institution of such therapy by eradicating the general septic features of such diseases will permit the local manifestation to heal spontaneously or with a modicum of surgery. Like empyema, acute osteomyelitis promises, at least in many cases, to fall in the category of combined operations—by internist and surgeons—the methods of one or the other or both successfully prevailing.

<sup>1</sup> Handfield-Jones, R. M., and Porritt, A.: *Essentials of Modern Surgery*, E. and S. Livingston, Edinburgh, 1943, p. 1020.

<sup>2</sup> Christopher, F.: *Text Book of Surgery*, 3rd Ed., W. B. Saunders Co., 1942, p. 566.

<sup>3</sup> Baker, L., Schaubel, H., and Kuhn, H. H.: *J. Bone & Joint Surg.* 26: 315 (April) 1944.

### Changes in Registration of Physicians in New York State

Many members of the Society have been confused by receiving bills for registration from the Division of Professional Education in Albany for four dollars instead of two dollars. This change is due to the fact that registration is now for two years instead of one year.

The change was approved by our Council on February 10, 1943, as an amendment to the Medical Practice Act which was subsequently passed by the Legislature.

Registration cards with checks should be in the office of the Division of Professional Education by January 1, 1945. Under the law the fine for delay of payment is one dollar for each thirty days or part thereof.

This ruling does not apply to physicians already in the service or those who will be in service before January 1, 1945.

It is recommended, however, that all physicians who are entering the service inform the Division of Professional Education of their removal from practice so that their records will be clear when they return.

COUNCIL COMMITTEE ON PUBLIC RELATIONS AND ECONOMICS

# *Symposium: Etiology, Diagnosis, Treatment, and Prognosis of Essential Hypertension*

## **MEDICAL TREATMENT OF UNCOMPLICATED HYPERTENSIVE VASCULAR DISEASE**

DANA W. ATCHLEY, M.D., New York City

IT IS difficult to restrain one's temptation to introduce this discussion of the treatment of essential hypertension with a series of don'ts. Certainly a most significant part of our progress in the past twenty-five years is the discovery that much of our interference with these patients has been unnecessary and even, at times, harmful. However, I shall postpone these comments, and attempt a somewhat more logical approach.

The natural first step of such an approach should be the enumeration of methods for removing the basic cause of the disease, or at least some suggestions that would result in slowing its progress. Unfortunately, we know nothing of practical significance about the organic causes of hypertensive vascular disease in man, in spite of the brilliant series of experiments on other animals that was initiated by Goldblatt. The incidence of hypertension due to unilateral renal disease has disappointingly turned out to be too small for serious consideration. Many clinicians hold the firm opinion that the advance of this disease can be inhibited by reducing the level of arterial tension, but there has been little evidence of a clear correlation between prolonged elevation of blood pressure and the incidence of serious complications and I am, therefore, not entirely convinced that this assumption is correct. Nevertheless, it is not unreasonable to recommend to the hypertensive those measures of moderation in living which tend to decrease the physiologic and psychologic stimuli that might produce a rise in arterial pressure. Special emphasis may be given to the psychologic component. Parallel with the physiologist's studies of hypertension and similar substances has moved the psychologic analysis of the hypertensive individual. And in certain respects it is more fruitful for the contemporary clinician to use the suggestions of the psychiatrists than those of the physiologists. The sympathetic and scientific management of a patient's emotional problems

may play a real role in inhibiting the progress of the disease as well as in keeping the blood pressure at lower levels. On the other hand, an attempt to depress arterial tension by the use of hormones, tissue extracts, electrical treatments, or various drugs (other than sedatives) has been either unsuccessful or of unproved value. Some substances of varying toxicity are in this unproved group. They have no place outside of the experimental clinic. In brief, it seems apparent that our ignorance of the basic mechanisms producing hypertensive vascular disease in man leaves us with no satisfactory direct therapy except in so far as an understanding of the emotional problems permits us to reduce adverse nervous influences. I recognize that some psychiatrists feel that there is a specific pattern of emotional disturbance at the root of essential hypertension. Here again, the internist is in no position to make flat denial, but at the present time he cannot find practical assistance from this hypothesis.

If we are unable to cure the disease itself, can we perhaps help these patients to avoid the complications, cardiac, renal, and cerebral, that are so characteristic? An immediate negative reply on the renal and cerebral side will be given by the medical man. On the other hand, it is possible to give sound advice in the prevention or at least postponement of cardiac failure, and, fortunately, many more hypertensives tend to follow the cardiac than the cerebral or renal routes. Reduction in weight, careful watch over the cardiac area, with exercise restrictions adapted to evidences of a changing myocardial status, avoidance of peak loads are general principles known to all, and in most instances are productive of real benefit. When failure of the left ventricle of the heart finally appears, the hypertensive heart usually yields well to modern cardiac management, and often many years of not too limited activity may ensue.

After pointing out the meager therapeutic possibilities in dealing with the causes of this disease, one may turn next to the treatment of symptoms. It is, first of all, necessary to differentiate between the clinical manifestations

Read at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944. Part of a symposium on essential hypertension.

From the Department of Medicine, College of Physicians and Surgeons, Columbia University, and Presbyterian Hospital, New York City.

of uncomplicated hypertensive vascular disease and the complaints offered by these patients as complications appear. Thus, the symptoms of cardiac failure need no comment here, for they are handled as other cardiac conditions are; similarly, the terminal uremic state of nephrosclerosis is treated simply as uremia. It would be irrelevant to elaborate the details of such treatment in a paper on the care of essential hypertension. Furthermore, in ordinary general practice a majority of all individuals with high blood pressure belongs to the group without serious complications.

When considering the symptoms of essential hypertension per se, a curious problem arises. This problem is the difficulty in defining these symptoms. Because of the ease and objectivity of a blood pressure determination, variations from the normal range in both directions came to be an easy explanation of that large series of ill-defined complaints that are usually the expression of emotional disturbances. It is easier to tell an individual that he has a low blood pressure or a high blood pressure than patiently to seek out the worries and stresses of his life. It is not surprising, therefore, that an identical set of symptoms has been attached to both hypotension and hypertension. Exhaustion, lack of energy, dizziness, headache, easy fatigue, irritability, insomnia, are a few examples from this group of complaints. The low blood pressure syndrome is being rapidly discarded, but many patients are treated for hypertension when their symptoms could be relieved by attention to their anxieties or resolution of their conflicts. Indeed, this approach would probably benefit the hypertension itself. It must be confessed that the anxieties of the hypertensive patient are occasionally caused by the contagious panic of the physician as he reads the blood-pressure apparatus. I have recently seen a dramatic example of this. An entirely symptomless woman visited her physician for a routine check-up; he found hypertension, put her to bed for one month, and restricted her activities thereafter to a painful minimum. When seen eight months later, she had a long list of unpleasant feelings, every one classically neurotic. Stopping her complicated medication, reassuring her, and returning some interest to her life did not cure her hypertension but it removed her from the invalid list.

Although most complaints of exhaustion in patients with hypertensive vascular disease are difficult to differentiate from similar complaints in normal individuals, there are occasional instances of this manifestation in hypertension that correlate well with the advance of the disease and are clearly independent of any other life factors. No medical treatment other than rest is

helpful, and, in general, the symptom is a rather bad prognostic sign.

The symptom most commonly mentioned in relation to hypertensive vascular disease is headache. When one realizes the frequency of this complaint in normal people, it is apparent that a very careful analysis of other factors must be made before the hypertension itself can be conclusively implicated. In order to throw some light on the incidence of headache in this disease four of our medical students analyzed the headaches occurring in 144 cases: 33 general hospital patients, followed for ten years or more, and 111 cases from our hypertension clinic, with an average observation period of nine and a half years. The headaches were designated 1 plus to 4 plus according to their intensity. With these standards a 1 plus headache is so mild that it can be classified as no headache as far as this study is concerned. Our hypertensive patients had surprisingly few headaches; in fact, 38 per cent of them had no headaches on any visit. The clinic patients visited the hospital at least once a year, reporting on the previous twelve months' manifestations; the general medical patients came less frequently, but the entire group, over an average observation period of eleven years, accumulated 1,103 yearly visits. Since each visit included careful questioning as to an entire year, the fact that on 77 per cent of the visits no headaches were reported affords further evidence of their infrequency. On only 11 visits, or 1 per cent, were 4 plus headaches mentioned. Further analysis showed no correlation between changes in the level of the blood pressure and alterations in the severity of headaches; just as many headaches improved as the tension increased as when it dropped. In this small but carefully studied series there was also no correlation between the severity of headaches and the cardiac or renal status; nor did individuals who suffered cerebral accidents or progressive fundus changes present this symptom more often. Finally, it is of interest that of 89 cases with 2 plus or greater headaches, only 22 reported them on more than two consecutive yearly visits, only 8 on five or more consecutive years (one of these 8 was a typical neurosis). This lack of persistence in the headaches was not dependent on any specific therapy directed toward the hypertensive state. To summarize, a study of 144 patients, followed over an average of eleven years, showed that many hypertensives had no headaches, and very few of them had prolonged or persistently severe ones.

Headaches in hypertensive vascular disease should, therefore, be investigated with an open mind as to origin. The usual causes of headache should be considered and eliminated when-

ever possible. In those instances in which the hypertension seems to be the essential factor, one tries a series of experimental therapies, although it is hard to evaluate treatment because of the fact that spontaneous remissions are so frequently observed. Rest and sedation come first, with chloral as a most satisfactory remedy; if these fail and the headaches are very severe, lumbar puncture is very occasionally helpful. I am entirely unconvinced as to the beneficial influence of vasodepressor medications, such as the nitrites.

The foregoing discussion undoubtedly leaves the impression that I consider the average patient with uncomplicated hypertensive vascular disease to be a relatively symptomless and healthy person. This is true. Those hypertensive individuals who are genuinely sick fall into two classes: first, those with complications; and, second, a small group with rapidly progressive cases who, even before they exhibit cardiac, renal, or cerebral manifestations, become ill of headaches, exhaustion, anorexia, and irritability. This latter group tends eventually to develop nephrosclerosis and enter the so-called "malignant" phase. I know of no medical therapy that can interrupt their progress, and palliation is difficult. These individuals are entitled to surgical consideration even if the percentage of successes be low.

Fortunately, however, most patients with essential hypertension are relatively normal people and require only a minimal amount of management. While they should be examined at approximately yearly intervals in order to discover any signs of the usual complications, at other times they should be left entirely to their own devices. Weekly or monthly blood pressure measurements are not only unnecessary but actually detrimental.

The first step in treating a patient with uncomplicated essential hypertension consists in imparting to him the knowledge of its existence. It is difficult to exaggerate the importance of this initial move. In fact, I do not hesitate to say that when this step is properly planned the rest of the program could almost be omitted, but if it be poorly done, no amount of good advice can compensate. The current naive apprehension concerning high blood pressure, based on the belief that an immediate stroke will result from the blowing-out of an artery, tempts one not to divulge the existence of hypertension. There are two reasons for avoiding this easier path: first, to avert the possibility that someone else may take the blood pressure and create alarm; and second, to obtain the leverage that this knowledge affords in influencing the patient to carry out the therapeutic program. It is necessary at

this point to interject a few don'ts. Do not express anxiety. Do not reveal the exact blood pressure reading. Do not *immediately* interrupt the patient's career in any way. Do not take the cowardly course of mentioning every serious possibility, remote though it may be, merely to be on record against the event.

Every effort should be exerted to introduce a casual tone, and the average prognosis justifies it. It is reassuring to speak of a blood pressure "tendency," disabusing the patient at once of any alarming ideas that he has picked up from friends or physicians. It is comforting, and correct, to indicate that no alteration of life is necessary other than that which is wise for anyone of his own age, provided he be over 45 years old. The elevated blood pressure simply makes sensible behavior mandatory. Patients under 45 may follow the pattern of their more phlegmatic and slow-moving friends. No uncomplicated hypertensive should be given therapeutic limitations which would make his habits of life obviously unnatural.

It is hardly necessary to state in detail the directions required for sensible behavior. They include the avoidance of peak loads of exercise and undue pressure of work, but the program should never be a stereotyped one distributed on a printed sheet. As long a period as present-day schedules permit should be devoted to a sympathetic conference with the patient about his work, his habits, his stresses, and his worries. An appropriate therapeutic plan can be derived from the facts obtained in this interview. The hypertensive individual should be encouraged to return from time to time for reassurance and guidance. Do not use the blood pressure apparatus on these return visits, even if so requested by the patient. That apparatus should not appear oftener than once a year. I surely do not need to add that the appearance of any new symptoms or signs demands a careful total reappraisal, of which the height of the blood pressure should be considered as only an incidental item.

No specific dietary therapy has stood the test of clinical study. Meat and salt are permitted; nothing is forbidden except intemperance. However, many patients do require caloric restriction as an antiobesity measure, for there is no doubt that obesity is a serious detriment to the hypertensive. It is the opinion of some, in which I concur, that the use of tobacco is inadvisable in a disease that tends to develop vascular lesions; on the other hand, it is generally conceded that the moderate use of alcohol is harmless.

In turning to a discussion of drugs, one can give immediate approval to the use of sedatives. However, their use should be guided by the clinical needs of the patient, not by the existence

or height of the hypertension. It is fair to add that one is more sensitive to these clinical needs in a hypertensive than in certain other types of disease. I have previously indicated little enthusiasm for the vasodepressor drugs; moreover, it is psychologically bad practice to give a medicine to "bring the blood pressure down." This recommendation introduces an emphasis on the tension itself which it is wiser to avoid. In our clinic we have never used potassium thiocyanate because we felt that the reported results did not justify the experiment.

While the surgical treatment of hypertensive vascular disease is to be covered in a subsequent paper, it may be permissible for the internist to make a few comments. As I have stated previously, the individual with any evidence of impending nephrosclerosis has, in the immediate future, so serious a prognosis that he should not be denied operation, even though the statistical odds are greatly against him. Similarly, but slightly less emphatically, one can maintain that cardiac insufficiency or severe retinal damage, particularly papilledema, calls for a surgical attempt to avert their progress, if possible; again, regardless of the percentage of successes. Even the otherwise uncomplicated hypertensive who has had a cerebral accident may acceptably be included in the operative group in the hope of preventing a recurrence. The experiment should probably be made.

On the other hand, many internists find it extremely difficult to arrive at a satisfactory position regarding sympathectomy as a procedure to be employed in the average patient with essential hypertension who is symptom-free and entirely without complications. Here the good prognosis not only for survival but for continued health may be indefinitely prolonged. With each advancing decade of life, this prognosis is so considerably improved that in a patient over the age of 60 one would hesitate to open the subject of

operation at all. It will take some years of careful and continued observation before we can determine the value of sympathectomy as a preventive measure, to be carried out before definite changes in the heart, kidneys, or eyes take place. The previous discussion of symptoms not caused by complications would suggest the need for a certain amount of conservatism toward the use of radical surgery for this objective alone.

I would like to interject at this point a few comments on the classification of patients with hypertensive vascular disease by their fundus changes into the so-called groups I to IV. It is my opinion that this is an unjustified oversimplification which makes it difficult for the experienced clinician to analyze many of the published studies. This is particularly true when such a limited classification is adopted in reporting the results of sympathectomy. Hypertensive patients should be more or less quantitatively appraised in relation to their several components: cardiac, renal, cerebral, fundi, age, etc., the summation of which determines the status of the particular individual under consideration. Only the presentation of data based on this more comprehensive classification of patients will make it possible for the internist to reach sound conclusions as to the value of sympathectomy.

It has been my purpose in this paper to indicate that the average person with uncomplicated hypertensive vascular disease is relatively normal. He should be guided by his physician in the minimal revision of his life which his age and habits would suggest, bearing in mind that the common physical hazard is in the cardiac area. The adverse influence of emotional stress should be palliated by giving regular reassurance and by offering understanding aid with any emotional problems. The physician will thereby have accomplished all that lies within his power to make the fairly long span of most hypertensive patients as useful and as happy as possible.

## OBSERVATIONS ON CERTAIN LESS WELL-ESTABLISHED INVESTIGATIONS ON HYPERTENSION

IRVINE H. PAGE, M.D., Indianapolis, Indiana

**M**Y PREDECESSORS on this program, fortunately for me, have covered much of the information that rightly should be presented before any symposium on arterial hypertension. This, in a sense, leaves me free to dis-

cuss several miscellaneous and less well-established investigations which do not fit easily into a more formal presentation of the subject. I shall take fullest advantage of this opportunity.

### Classification of Hypertension

Arterial hypertension occurs in association with a wide variety of diseases. I have compiled a table of these, including all of them of which

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 10, 1944. Part of a symposium on essential hypertension.

From the Lilly Laboratory for Clinical Research, Indianapolis City Hospital, Indianapolis, Indiana.

TABLE 2.—KEITH-WAGENER GRADING OF HYPERTENSIVES

Renal

A. Affections of vessels  
Arteriosclerosis  
Panarteritis nodosa  
Arteritis

ysm, arteriosclerosis,

B.

Infarcta  
Tumors  
Hypernephroma  
Ectopia  
Toxemia of pregnancy  
X-ray lesions  
Renal stones  
Hypogenesis  
Dystopia

C. Affections of perinephric structures  
Perinephritis  
Tumors  
Hematoma  
Wilm's tumors  
Retroperitoneal masses causing pressure on parenchyma

D. Affections of ureter  
Obstruction (pelvis, ureter, prostate, urethra)  
Pyelitis

Cerebral

Increased intracranial pressure (trauma, tumor, inflammation)  
Diencephalic stimulation  
Anxiety states  
Lesions of brain stem (ascending paralysis, poliomyelitis)

Cardiovascular

Heart failure  
Arteriovenous fistulae  
Angina pectoris  
Heart block  
Coarctation of aorta  
Atheromatosis  
Lead poisoning?  
Polycythemia

Endocrine

Pheochromocytoma  
Adrenal carcinoma  
Adrenal hyperplasia?  
Chromonephelioma  
Adrenal-like ovarian tumor  
Cushing's syndrome (pituitary adenoma)  
Pituitary basophilism?  
Acromegaly  
Thymic carcinoma  
Hyperthyroidism  
Arrhenoblastoma

Unknown

Essential hypertension  
Malignant hypertension

Group 1	Mild narrowing and sclerosis of the retinal arterioles. Compatible with good health for many years.
Group 2	Changes in retinal vessels more marked. Disease
Group 3	A <sub>1</sub> " " "
Group 4	Edema of the disk, diffuse retinitis, spastic and organic arterolar narrowing. Asthenia, loss of weight, headache, visceral disturbance, dyspnea, proteinuria, hematuria.

It will be noted that the grading depends chiefly on the state of the eyegrounds. If one is forced to pick a single examination from all the rest, surely no wiser choice could be made. The method obviously lacks precision, but for bedside management it has much to recommend it.

The most serious objection seems to be the dividing line between Groups 3 and 4. It appears to rest too heavily on the presence or absence of edema of the disks. Except in older people, hemorrhages and exudates of any marked degree seldom occur without being shortly followed by papilledema. We think that when hemorrhages and exudates occur the disease is serious and is only somewhat more serious when papilledema occurs.

In our own clinic we grade the severity of the disease not only by examination of the eyegrounds but from renal functional and cardiac studies. Especially do we find the so-called diodrast Tm—i.e., the maximal ability of renal tubular cells to secrete diodrast, which is a measure of tubular secretory capacity—a datum of the greatest importance.

Perhaps at this point I might say something about renal functional examinations in general. As clinicians, we have become so accustomed to the extremely simple tests, such as boiling urine, sediment examination, and dye estimation of secretory capacity that any examinations more complicated than these seem insurmountably difficult. Actually, even the most complete examinations, such as measurement of renal blood flow and tubular secretory capacity, are not nearly so difficult technically as many examinations on other organs which are commonly in use. When one reflects that the information obtained from a thorough study of the functions of the kidneys is of paramount importance in many

am aware (Table 1). Such tables are useful largely for two reasons. They point out the wide variety of morbid states in which hypertension may be anticipated and they act as a check list in establishing causative diagnoses. There is one unfortunate thing about this table; it accounts for, at most, only 3 to 5 per cent of the patients with hypertension. The remainder are the *essential and malignant* hypertensives. Can these similarly be classified into causative groups? The attempt has been made, but to date has achieved no signal success.

Keith and Wagener were the first to use a method of grading hypertensives according to the severity of the disease. Thinking about this

cardiovascular diseases, it is certainly not too much to ask that the simple give way to the more difficult but infinitely more informative procedures.

It has always seemed desirable to attempt a causative classification even though the data on which to make it are meager. It was obvious to most clinicians that many early or moderate hypertensives exhibited signs and symptoms of nervous hyperactivity and this led to the view that hypertension was caused by excessive vasomotor impulses producing increased peripheral resistance and hypertension. Certainly this is not wholly true, but equally certainly it is not wholly wrong.

It seems reasonable to believe that the hypertension of certain patients is, in large measure, caused by nervous hyperactivity, while in others a humoral mechanism is largely responsible. Indeed, it may well be that a neurogenic phase precedes the humoral and that the two imperceptibly shade into one another.

It is these early cases of hypertension, so commonly discovered at present, that will now be considered. We find it convenient to divide them into four groups in an effort to arrive at a useful diagnosis.

### Early Hypertension

1. Simple vasomotor lability—those who have transient and irregular episodes of elevated arterial pressure, chiefly systolic, associated with increased heart rate and usually some obvious emotional stimulus. The characteristic clinical picture of essential hypertension is not present. The latter does not necessarily develop.

2. Prehypertensives—those who will develop hypertension.

3. "Neurogenic" hypertensives—those with established hypertension but on a "neurogenic" basis—i.e., with signs and symptoms of nervous hyperactivity. Excessive vasoconstriction in the kidneys, if present, may be abolished by spinal anesthesia.

4. Early essential hypertensives—those who have established hypertension chiefly on a humoral basis.

*Prehypertensives.*—It is salutary to recognize that we know little about methods of differentiating prehypertension from simple vasomotor lability. And it is important to recognize that there may be a difference. It is no uncommon experience to find the arterial pressure at slightly abnormal levels in some people and ten years later find it at normal levels. Undoubtedly it is, however, more common to find it at a higher level than it was on the initial examination. The problem is how to differentiate the two. At present there is no sure way.

The response to the cold-pressor test may be, and usually is, more intense in the prehypertensive, especially the rise in diastolic pressure. But the difference may be insufficient for differentiation. A history showing a large incidence of hypertension in the family strengthens the diagnosis of prehypertension. Body build may give some slight clue. The psychologic inventory should be of value, but as yet there is no agreement as to what constitutes a pattern leading to hypertension. This lack is greatly in need of remedy. It is important at this stage to exclude other causes of hypertension, such as chronic pyelonephritis.

While all of these factors are of value in selecting the prehypertensives, still they are not sure enough. The addition of a few more definitive examinations would significantly increase the certainty of diagnosis. This is one of the important and persistent problems of cardiovascular disease.

*Neurogenic Hypertensives.*—Symptoms and signs of a disordered nervous system in certain hypertensives long ago led to the belief that in some, at least, the disease was caused by increased activity of vasomotor nerves. But objective evidence was not obtained that this was so. Indeed, so extravagant and uncritical were some authors in their assumption of the correctness of this view that a reaction against it was initiated, culminating in the belief that the nervous system had nothing whatever to do with hypertension. The swing is now again in favor of its importance in the genesis of certain cases of hypertension.

It is well to remember that the term "neurogenic" signifies that the hypertension has its origin in the nervous system probably by increasing the number of impulses carried by the vasomotor nerves. Strict proof that hypertension is ever so caused is not at hand. But certain scanty evidence suggests that it might be true.

It is possible that the neurogenic element reaches its zenith in the early phase of hypertension, to be supplanted later by the humoral mechanism. An example of the possibility of a neurogenic origin of hypertension is that found in only one of two identical twins. It is generally assumed that the hereditary pattern of identical twins is alike and hence the presence of a disease in one but not in the other tends to minimize the importance of the hereditary component. Renal blood flow and glomerular filtration rates are similar in the hypertensive and normotensive twins, but the psychologic patterns are different. From these facts it is suggested that the psychologic pattern is of primary causative significance.

From bedside observation, two clinical pictures have been observed which strongly suggest the

importance of the participation of the nervous system in certain types of hypertension. The first of these, hypertension with manifestations of a neurosis, is probably the most common, but also the less well defined. A small group of psychiatrists have attempted to find a characteristic psychiatric pattern which might have a causative connection with the hypertension, but as yet their results do not carry conviction. And still one has the feeling that there must be some common denominator in the mental pattern so frequently seen in hypertensives. It is a new vista and requires intensive investigation as a combined study by internists and psychiatrists. The second, the "hypertensive diencephalic syndrome," presents a clearly defined clinical picture, but the evidence in favor of its being of neurogenic origin is only by analogy. Regardless of its mechanism, it is important to differentiate it clinically because of its different course and prognosis.

*The Hypertensive Diencephalic Syndrome.*—This syndrome was described as occurring usually in young and middle-aged women, though it may be seen occasionally in men. It is characterized by hypertension of the labile sort, but especially by the periodic appearance of a blotchy blush which extends down over the face and upper chest, seldom, if ever, involving the limbs. Indeed, the latter are usually cold and have a dusky, mottled hue. Over the area of blush are minute beads of perspiration. Lacrimation or merely "watering" of the eyes may occur without an associated emotional counterpart. Tachycardia and hyperperistalsis are common. These episodes may occur without any apparent reason or may be brought on by embarrassment or excitement. The diagnosis of Grave's disease is often made because of these signs and symptoms and because the thyroid gland may exhibit slight diffuse enlargement and the basal metabolic rate may be elevated from +10 to +30. Subtotal thyroidectomy is of no benefit to these patients, yet it is the rare patient with this syndrome who escapes this operation.

The syndrome was called "diencephalic" because almost identical signs can be brought on by diffuse stimulation of the diencephalon in humans.

This syndrome is worth recognizing, not only because an operation on the thyroid gland may be avoided, but because the prognosis seems to be, on the whole, better than the more usual varieties of essential hypertension.

#### Renal Function Study Designed to Differentiate Vasoconstriction of Neurogenic and Humoral Origin

Studies employing the inulin and diodrast clearances along with examination of the maxi-

mal ability to secrete diodrast iodine—i.e., total effective tubular mass (diodrast Tm)—by Drs. A. C. Corcoran and R. D. Taylor show that patients denominated as hypertensives of "neurogenic" origin show little abnormality of renal function. If the vasoconstriction in them is of nervous origin and is not humoral, then it should be possible to release it by functional renal denervation such as that caused by high spinal anesthesia. Evidence that this has occurred should be obtained from examination of the changing balance between arterial pressure and renal blood flow.

It appears from a study of ten "neurogenic" hypertensives that this is so. When spinal anesthesia was administered so that it extended to the nipple line in patients with essential hypertension, no consistent change in arterial pressure or renal blood flow occurred, suggesting the humoral origin of the changed intrarenal hemodynamics. On the contrary, in the "neurogenic" group arterial blood pressure fell, renal blood flow rose, and resistance to the flow of blood in the kidneys fell sharply.

These findings suggest but by no means prove that neurogenic vasoconstriction occurs in certain patients with hypertension and points to a method for differentiating them from those with hypertension maintained on a humoral basis. Possibly the method may be of value in the selection of patients for thoracolumbar sympathectomy.

#### A Biologic Test Presumably Indicative of the Participation of the Humoral Mechanism in the Genesis of Hypertension

Several years ago we showed that if heparinized plasma from hypertensive dogs or human beings was perfused through a rabbit's ear vessels, with Ringer's solution as the perfusing medium, little or no vasoconstriction occurred. But if, instead of Ringer's solution, normal plasma was used to perfuse the ear, injection of hypertensive's plasma caused marked vasoconstriction, while normotensive's plasma did not.

The biologic test preparation used to demonstrate this phenomenon is an interesting one. The ear of a rabbit is severed with one quick stroke of a razor blade and a glass cannula is inserted into the auricular artery. The ear is then mounted on a plate in a temperature-regulated box and by means of a pulsating column of fluid, it is perfused. The drops coming from the ear are recorded by a drop-counter on a smoked drum. Both the length of time vasoconstriction persists and the intensity are noted.

We now employ carefully citrated plasma drawn so as to avoid hemolysis and coagulation. When blood coagulates, a vasoconstrictor is



TABLE 3.—EXAMPLE OF THE TEST FOR P.V.C.—RABBIT'S EAR PERFUSED WITH NORMAL CITRATED DOG'S PLASMA

Source of Plasma Sample	Blood Pressure (mm. Hg)	Reduction of Flow—Time in Minutes	Percentage Reduction of Flow
Normal.....	138/98	1 1/2	14
Lobar pneumonia.....	134/90	1 1/2	14
Orthopaedic problems...	130/88	1	10
Fracture.....	134/76	1	10
Malignant hypertension..	250/150	3 1/2	43
Malignant hypertension..	230/120	3 1/2	38
Mastoiditis.....	122/80	1	10
Essential hypertension..	190/90	3	40
Lysol burn.....	110/60	1 1/2	14
Essential hypertension..	230/120	3	34
Normal.....	116/80	1 1/2	14
Malignant hypertension..	240/160	3 1/2	40
Normal.....	124/90	1 1/2	14
Cholecystitis.....	132/86	1 1/4	14
Bowel obstruction.....	124/88	1 1/2	14
Mitral stenosis.....	134/90	1	10
Malignant hypertension..	248/146	4	50

formed regardless of the origin of the blood. Citrated plasma is also used as the perfusing medium. Only 0.2 cc. of plasma is required for a single test.

Vasoconstrictor substance resulting from mishandling the blood or by coagulation is easily detected when the plasma is perfused with Ringer's solution as perfusing medium, since neither hypertensives' nor normotensives' plasma causes significant vasoconstriction under these circumstances. Under the conditions of our test, plasma should either cause no vasoconstriction if used with Ringer's solution, or, at most, vasoconstriction lasting 1 1/2 minutes and reduction of 20 per cent of the initial flow.

When plasma is employed as perfusing medium, no more vasoconstriction should result when the test plasma is from a normotensive than occurs when Ringer's solution is used. But hypertensive plasma causes constriction lasting three to four minutes with 30 to 60 per cent reduction of the initial flow. The values shown in Table 3 will, I hope, make this clear.

I would not want to leave the impression that this test is very simple technically. It is tricky until one achieves considerable skill in performing the necessary manipulations. But once this skill is attained, the results are, for the most part, reliable. In a recent series of "blind tests," two mistakes were made in the examination of forty blood samples. And most of these were not run in duplicate, as of course they should be for reliability.

The significance of the results is not easy to evaluate. But since in this discussion I am not trying to stick too closely to established fact, an attempt can be made to see what they mean. We shall call the substance in the hypertensive's plasma "peripheral vasoconstrictor substance" or, more simply, P.V.C., to avoid, if this is possible, too broad implications resulting from a more

definitive name. This is certainly a nondescript nomenclature, but pending the chemical separation and identification, it seems better to postpone more exact wording.

Has P.V.C. anything to do with hypertension, and, if so, where does it come from? The answer to the first question comes very simply from the fact that P.V.C. occurs only in hypertensives, human or canine, so far as we have been able to determine. It is possible that there may be clinical states in which the hypertension is not actually manifest, but in which, despite this, the stimulus is there. So without more evidence we cannot say that it *never* occurs in the absence of hypertension, but so far it seems closely associated with it, and this applies to dogs with experimental renal hypertension or to human beings with hypertension of the essential, malignant, pyelo- or glomerulonephritic varieties.

Another reason we think it is of renal origin is that it occurs in the blood after a Goldblatt clamp is put on the renal artery or after the kidneys are wrapped in cellophane or silk. Adrenalectomy does not prevent its appearance. In human beings it occurs after a wide variety of renal injury with hypertension. Thus the most reasonable assumption is that P.V.C. results from the action of a renal mechanism set off by injury of various sorts.

The question arises whether P.V.C. is angiotonin or not. A number of observations indicate that it is not identical with angiotonin but is similar. It does not pass through an ultrafilter; hence we may assume that it is of high molecular weight or associated with high molecular-weight substances. It is unstable to heat but persists in plasma kept in an icebox or at room temperature for some time. In short, there are a number of chemical and physical properties which differentiate it from angiotonin, yet both substances appear to arise in much the same way. We make the tentative suggestion that P.V.C. is really angiotonin or some similar substance combined with a protein carrier.

Thus we arrive at the notion that when the renal humoral mechanism is set going, this protein vasoconstrictor is formed, which is reflected in the perfused rabbit's-ear test. As you probably have suspected by now, we are of the opinion that much clinical hypertension has a neurogenic stage and that it ultimately becomes humoral. Certainly what passes for neurogenic hypertension as determined by the spinal anesthesia test is a far less aggressive and mortal disease than the varieties we think of as being humoral in origin.

Therefore, if all these assumptions are correct, and most probably they are not, it is the hope that determination of P.V.C. in the blood will give some indication of when the humoral mechanism

has come into action. This may be the turning point in the hypertensive's life as he passes from the easily reversible, labile state to one more fixed, more destructive, and one far more difficult to treat. In broader biologic terms, the sophisticated nervous control of the blood vessels gives precedence to the more primitive humoral control.

### Effect of Large Doses of Vitamin A Concentrate on Normal and Hypertensive Patients

Several years ago, it was reported by Govea-Pena and Villaverde that doses of the order of 100,000 to 200,000 units of vitamin A given initially, followed by a maintenance dose of half that amount, produce spectacular results in lowering the blood pressure of hypertensive patients. Unfortunately, the protocols were so limited that it was not possible to judge the adequacy of the work. Shortly after the appearance of their article, a wave of self-prescribed vitamin A administration swept this country. The most fabulous cures were reported to us by people of all walks of life. It seemed, according to these inexperienced observers, that the answer to the problem of hypertension was at hand.

Some evidence was soon reported in which it appeared that vitamin A-containing preparations were antipressor in dogs with experimental hypertension. It seemed that the antipressor effect was not due to the vitamin A itself but to some other substance contained in the concentrate. The antipressor action was not evident after administration of the provitamin, carotene.

Furthermore, it persisted after destruction of the vitamin A by irradiation. Some investigators, on the other hand, found large doses of vitamin A concentrates ineffective in lowering the blood pressure of experimentally hypertensive animals.

The arterial blood pressure of hypertensive rats has been reported to be lowered by vitamin A concentrates. Fish body and liver oils contain a substance which lowers blood pressure, the effectiveness of which is increased by oxidative procedures which destroy vitamin A. Thus, the evidence so far on experimental animals suggests that an antipressor substance may be contained in fish oils and vitamin A concentrates which is not vitamin A itself. The results have, to date been highly irregular and further chemical studies will be necessary before adequate evaluation of this associated substance can be made.

The clinical results on carefully controlled patients have been far from encouraging. In striking contrast to the word-of-mouth, lay observa-

tion of spectacular fall in blood pressure, these results show no significant effect on blood pressure during periods of high doses of vitamin A concentrate (i.e., 100,000 to 400,000 units daily) exhibited for periods up to a year. It is just possible that the concentrates by chance did not have enough of the associated antipressor factor to be effective, though one must admit this as being somewhat remote.

Thus, the evidence for depressor action of vitamin A in human beings and even in animals is far from being established. An associated substance which is depressor is a perfectly reasonable assumption and we look forward with interest to the results of the work which is now in progress.

An effect of large doses of vitamin A which was rather unexpected came to light as the indirect result of the interest in this substance in the treatment of hypertension. The interesting observation had been made that the vitamin increases urea clearance in man and inulin clearance (a measure of glomerular filtration) in normal and vitamin A-deficient dogs. This suggested that vitamin A caused renal vasodilatation.

When large doses of vitamin A (100,000 to 400,000 units daily) are administered to nephritic or hypertensive patients, often there is an increase in effective renal blood flow and glomerular filtration rate and less often an increase in tubular secretory capacity for diodrast. The increase in renal blood flow was usually associated with increased cardiac output, the result of tachycardia and not of increased stroke volume.

These effects would seem to be desirable ones, especially if they were maintained. In a few patients they appear to be, but in others, after a temporary rise, the effect is lost. Whether this is due to the progressive nature of the disease or simply to the fact that the stimulant is no longer effective cannot be said. Another difficulty is that all patients do not respond. More study may resolve this problem.

It is surprising that such large amounts of this vitamin seem to exert no deleterious effects. One patient received 400,000 units daily for ten months without any evident injury.

In a word, there are indications that vitamin A, or associated substances, produce in some patients with reduced renal efficiency beneficial effects, lasting in a few cases, but transient in most.

It is much too early even to suggest now the outcome of future investigation with this group of substances.

I have, I think, kept my word about presenting a heterogeneous and ill-established group of observations. My purpose in doing so was obviously to suggest some of the new vistas that are gradually being disclosed.

# OCULAR FUNDI IN ESSENTIAL HYPERTENSION, PRE- AND POSTOPERATIVE

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**S**URGICAL treatment of essential hypertension currently is not advised without a routine exhaustive study of the eyegrounds; originally, however, many patients were operated on in the absence of adequate ophthalmoscopic criteria with regard to the probable clinical success of the procedure suggested. This has been emphasized by the report of Wagener, Cusick, and Craig, whose findings indicated in the main that the less severe the organic lesions in the retinal arterioles the greater percentage chance there was of a successful surgical result.

It is necessary, therefore, for the observer to be familiar not only with the later intraocular manifestations of advanced essential hypertensive disease but primarily to appreciate the significance of the earlier and milder retinal evidences of generalized abnormal vascular physiology. Numerous classifications accordingly have been offered by many observers but this, in itself, is tantamount to admission that none is satisfactory. The most useful, however, are those of Wagener and Keith, Gifford and his associates, and Clay and Baird, in the order named. The first two authors have achieved a categorical simplification through consideration of so-called "albuminuric retinitis" associated with hypertensive cardiovascular renal disease as essentially *angiospastic* in origin. Thus there is afforded a relatively more definite prognostic evaluation not only statistically but also in the individual case, and this finds expression particularly in the determination of which cases are most suitable for operation.

It becomes convenient, then, to consider essential hypertension ophthalmoscopically as diffuse arteriolar disease varying in severity, and the observed alterations may be graded accordingly as 1, 2, 3, and 4, or mild, moderate, marked, and severe, respectively. This system of grading is a very useful guide to whether the particular phase of the disease under observation is chronic, progressive, or retrogressive. Thus, those patients who exhibit only smooth, generalized retinal arteriolar narrowing (whether mild or severe) are classified in Group I while those with sclerosis (no matter of what degree) together with generalized narrowing or attenuation of caliber of the retinal arterioles are to be placed in Group II.

When angiospastic retinitis, consisting of cotton-wool exudates and rather superficial hemorrhages, ensues together with previously existing narrowing and sclerosis the patient is to be placed in Group III, while those who exhibit papilledema in addition to all of the foregoing must be classified as Group IV, or "malignant hypertension." When the angiospastic retinitis seen in the latter two groups is encountered in the absence of sclerosis of the retinal arterioles, it is necessary to determine ophthalmoscopically whether one is observing acute vasospastic disease (of which hypertensive toxemia of pregnancy is the most frequent and obvious example) or the terminal hypertensive phase of chronic glomerulonephritis. In the latter the pallid eyeground indicative of secondary anemia frequently is a helpful diagnostic aid. The average life expectancy of chronic glomerulonephritic patients exhibiting terminal retinitis is about four months.

Keith, Wagener, and Barker, with reference to essential hypertension, have stated: "The prognosis for cases of Group III and especially for cases of Group IV is very serious. Because many more males than females belong to these two groups, the death rate is much higher among males than among females. A death rate, within one year, of 35 per cent in cases of Group III, and 79 per cent in cases belonging to Group IV, is in distinct contrast with that of 10 to 12 per cent in Groups I and II. The mortality rate in cases of Group IV approaches that found in certain forms of cancer." They comment further: "... not all cases fall into one of the four groups mentioned. There are many patients who have this condition (hypertension) who have, in addition to arteriolar dysfunction, diffuse arteriosclerosis, more especially of the aorta and of the coronary and cerebral arteries. Atherosclerosis of these arteries may be the determining factor as to the course and prognosis. With more knowledge relative to the occurrence of atherosclerosis in such vital internal arteries and with the aid of more accurate diagnostic methods, these cases might be grouped in a much more satisfactory manner than is possible at present."

[In the presentation of this paper four slides were shown to demonstrate the differential diagnostic fundus characteristics of the four principal groups of essential hypertension. The slides were kodachrome photographs of patients.]

In the early period of the surgical treatment of hypertensive disease, many patients were oper-

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\*Deceased

ated upon indiscriminately and many failures resulted. A criterion for the selection of cases suitable for operation was established only after a great many follow-up reports were made. It soon became obvious that in some types of cases, more than in others, the patient responded to sympathectomy. By classifying the patients with reference to their suitability for operation and by proper selection of cases the percentage of successful results has been increased considerably.

It has been reported, following the study of the retinas of patients before and after operation, that the chance of a successful result diminishes definitely with an increase in the severity of the organic lesion in the retinal arterioles. That is, a lowering of the diastolic blood pressure may be expected in a large percentage of hypertensive patients whose retinal arterioles show only grade 1 or 1 to 2 sclerosis. It has been shown, very interestingly, that the probability of obtaining satisfactory results is less in individuals with post-spastic-type than in those with chronic-type sclerosis.

It will be recalled that the development of arteriolar sclerosis in primary hypertensive disease is an expression of protection on the part of the body, or organism, as a whole against the potential lethality of abnormal vasospastic activity. When this activity is low grade, although progressive and prolonged, sclerosis is distributed diffusely; when angiospasticity is severe and rapidly fulminating, sclerosis will ensue if death does not supervene, but here the sclerosis will be distributed irregularly, since there has been afforded no opportunity for the usual adjustment of compensatory organic changes. In other words, the more "benign" the hypertensive disease, the less striking will be the ophthalmoscopic picture, and, accordingly, the better the prognosis from the surgical standpoint.

Wagener, Cusick, and Craig, and Fralich and Peet point out that the presence of retinitis in itself does not constitute a contraindication to sur-

gical treatment. According to the classification of Keith, diffuse arteriolar disease with hypertension, Groups I and II includes those persons with vascular changes in the retina but without retinitis. Patients with retinitis are placed in Group III or IV. Group IV represents those individuals in whom an acute angiospastic retinitis and measurable papilledema are superimposed on definite, pre-existing sclerotic or structural changes in the retinal arterioles. Therefore, a Group III hypertensive patient presenting mild to moderate, grade 1 to 2 sclerosis may be benefited by surgery, whereas a Group II patient, with marked to severe 3 to 4 sclerosis in all probability is doomed to obtain no benefit from surgery.

[Kodachrome pictures of the fundi of eight patients were shown. The pictures were of patients before surgery, immediately following surgery, and of at least one year postoperative follow-up. They illustrated the physical pathologic changes that may be expected from surgery of the several different groups of essential hypertension.]

## Conclusion

1. A careful estimation of the grade of sclerotic changes in the retinal arterioles is of value in determining the suitability of individual patients for surgical treatment in hypertensive disease. The proportion of good results may be expected to diminish as the amount of arteriolosclerosis increases.

2. Improvement in retinal lesions occurs during the immediate postoperative period in a good percentage of cases. This improvement is confined to decrease in the degree or to disappearance of the retinitis or to lessening in the tonic or spastic constriction of the arterioles or both.

3. Improvement may not be expected in the sclerotic or structural lesions in the retinal arterioles. An increase in the grade of arteriolosclerosis has been observed in a few cases seen at varying periods following operation.

## THE SURGICAL TREATMENT OF HYPERTENSION\*

Some Circumstances Under Which Lumbodorsal Sympathectomy Appears to Be Inadvisable in Hypertensive Patients

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FOR the past eleven years, a clinical investigation\* of hypertension in man has been in

Medical  
May 10,

Massachusetts General Hospital.

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progress at the Massachusetts General Hospital. Various departments—medical, pathologic, research, and surgical—have participated in this study.

A number of recent communications dealing with different aspects of this complicated problem have been written by White *et al.*,<sup>1-4</sup>

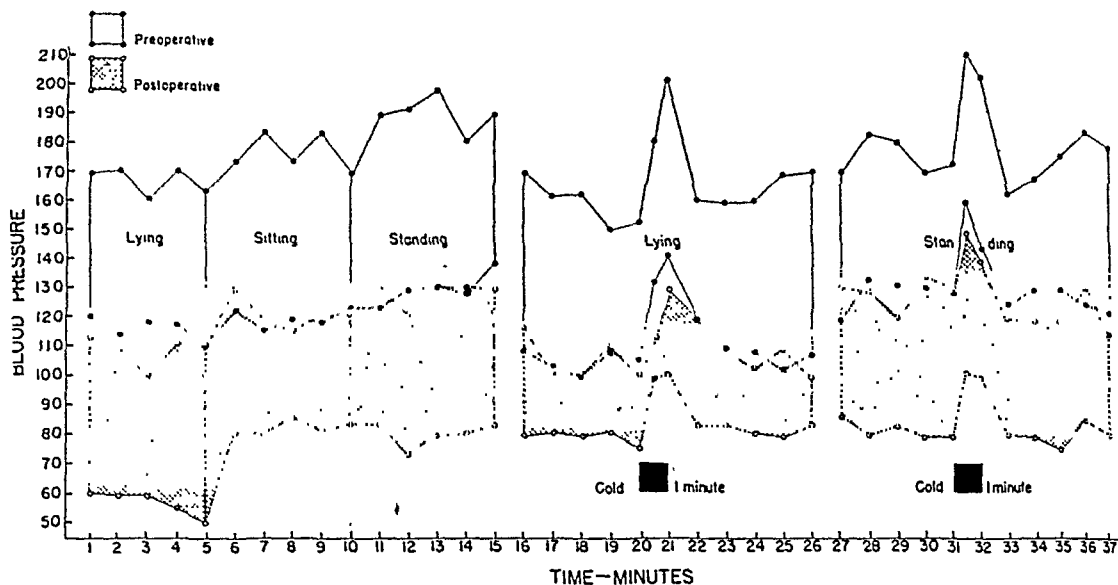


FIG. 1. Type 1 hypertension. A Group 1 result. Blood pressure (lying) 165/115 before and 109/56 one year after operation. A 27-year-old man, Grade 0 eyegrounds, normal cardiac and renal functions; response to sedation 104/70.

Castleman *et al.*,<sup>5,6</sup> Talbott *et al.*,<sup>7</sup> and Smithwick.<sup>8-10</sup>

Various operations were performed upon the sympathetic nervous system which were designed to interrupt the vasomotor supply to the arterioles of the abdominal (splanchnic) viscera. During the first five years, small groups of patients were operated upon by various technics, including multiple-stage operations in some cases. At the end of this time, it was felt that an operation could be performed which would result in physiologic evidence that this portion of the arteriolar bed has been thoroughly or completely sympathectomized. This evidence was the appearance of postural hypotension in the acutely denervated state. The technic for this procedure, which we have come to call lumbodorsal splanchnicectomy, was published in 1940.<sup>11</sup> It has been used continually for the past six years, since the latter part of 1938. In the first few years, it was employed in small groups of hypertensive patients, but more recently, during the past two years in particular, the series has been increased to over 500 cases.

The two stages of the operation are performed about ten days apart. The great splanchnic nerves are removed from the celiac ganglia to the midthoracic level and the sympathetic trunks are excised from at least the ninth dorsal to the first lumbar to at most the sixth dorsal to the third lumbar, inclusive. The operative mortality has been less than 3 per cent, which is low considering

the severity of the hypertensive disease in many of the cases. A further discussion of surgical technic will be published in the near future.

In recent publications,<sup>8-10</sup> it was noted that a significant and persistent lowering of the diastolic pressure followed operations of the above order of magnitude in the majority of a series of 156 cases. This was associated with favorable changes in eyegrounds, electrocardiograms, and cardiac and renal functions as judged by ordinary tests, as well as in symptoms. The lowering of blood pressure was thought to be due to a decrease in the tone of arteriolar smooth muscle. It was noted that the effect of operation in certain cases did not appear to be very significant, and in some cases the blood pressure when studied one to five years afterwards was found to be higher.

The results were divided into five groups. In the first four, the diastolic pressure was lowered 30 mm. or more, 20-29 mm., 10-19 mm., and up to 9 mm., respectively.

In the fifth group, the level was higher. It was also noted that, in general, women did better than men. Also, the results varied according to the type of hypertension. This refers to the width of the pulse pressure, which varies considerably in these patients. The cases were divided into three types: narrow, intermediate, and wide pulse pressure, and were called Types 1, 2, and 3, respectively. In general, it was found that the wider the pulse pressure the higher the percentage of poorer results.

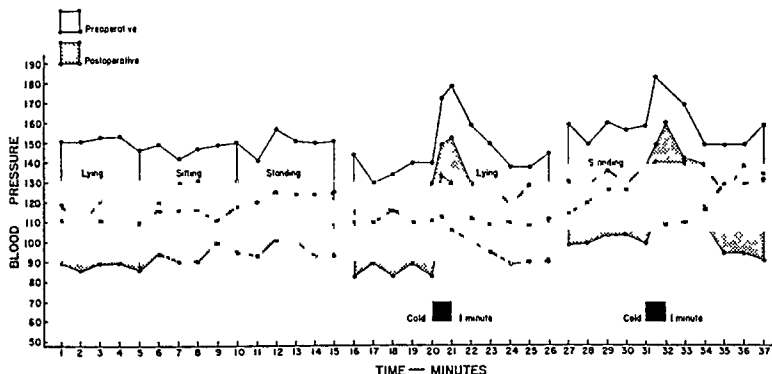


FIG 2 Type 1 hypertension. A Group 2 result. Blood pressure (lying) 150/110 before and 118/87 one year after operation. A 30-year-old woman, Grade 1 eyeground changes, cardiac and renal functions normal, response to sedation 100/70.

The purpose of this communication is to discuss the results of a slightly larger series of 179 living patients, followed one to five years, who had elevation of the diastolic level to 100–170 mm before operation. In addition, the 36 known deaths which have occurred during the past six years will be reviewed. This makes a total of 215 cases.

It is advisable to perfect the selection of cases for surgical treatment as far as possible. The complexity of the hypertensive state in man, which appears to be the result of a number of different factors joining together in an infinite variety of combinations, makes it necessary to divide cases into many groups, holding constant as many of the various factors as possible. This requires a large series of cases and the data available at this time permit only a preliminary and tentative discussion of this matter. By dividing the 215 cases into groups according to the two sexes, the three types, and five levels of preoperative diastolic pressure, a total of thirty groups, it is possible to suggest four rules, which, had they been available at the beginning of this investigation and followed closely, would have been extremely helpful in reducing the total mortality and the number of poorer (Group 5) results. These four suggestions have been given considerable thought, as it is realized that it is just as important to be able to state that a hypertensive patient cannot be helped as to indicate that he can be benefited by a particular form of treatment. As our experience increases, these suggestions will

be modified, amplified, and corrected if found to be in error, with the ultimate goal in mind the ability to select only those patients who will derive worthwhile results from operation.

Furthermore, during the past year in particular, we have operated upon a number of patients in the earlier stages of the hypertensive state, some with resting diastolic levels of 90–99 mm, and even a few who had levels below 90 when studied in the horizontal position after several days of rest and hospitalization, but who when up and active ordinarily had well-elevated levels, often severe, with associated cardiovascular changes. The follow-up of such cases may conceivably disclose that operation may be even more helpful when performed in the earliest instead of later stages of the disorder.

The preoperative data upon which the diastolic level and type of hypertension is based has been obtained in these cases as part of a routine of study. The patients have been hospitalized and the following studies carried out: fasting non-protein nitrogen, sugar, Hinton test, hematocrit, serum protein, cholesterol, hemoglobin, and smear. Description of eyegrounds with fully dilated pupils has been furnished by an ophthalmologist, and a 7-foot heart plate, electrocardiogram, and clinical evaluation of cardiac status have been made by an experienced cardiologist or internist. Several urinalyses, urine concentration test (twelve-hour), intravenous phenol-sulfonephthalein test (fifteen-, thirty-, and sixty-minute and two-hour), and intravenous pyelo-

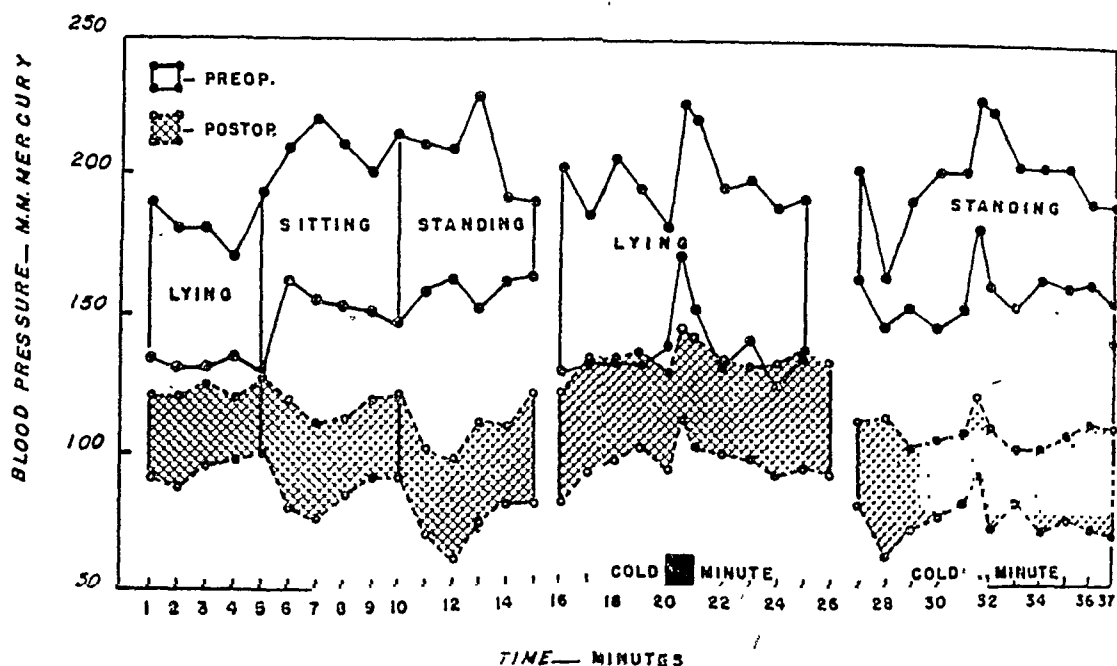


FIG. 3. Type 1 hypertension. A Group 1 result. Blood pressure (lying) 183/130 before and 124/93 fifteen months after operation. A 52-year-old man, Grade 3 eyegrounds, normal cardiac and renal functions; response to sedation 128/90.

gram have been done. Admission blood pressure was taken by a physician and a four-hourly blood pressure chart kept by nurses.

A postural and cold blood-pressure test is performed. This test is employed to study the reactivity of the vascular bed and to determine the approximate severity and type of hypertension of the particular individual. It is best performed after two or three days of hospitalization, most of which time should be spent in bed. To perform this test it is desirable that the environment be quiet and that the patient be lying on a comfortable bed or couch. A special room is recommended so that ward conditions of study can be avoided. The patient should rest for fifteen to twenty minutes. Readings of pulse and blood pressure are taken every minute for five minutes, first with the patient lying and then with the patient sitting and then with the patient standing. The patient then lies down again and pulse and blood pressure are again taken every minute, for five minutes, following which the hand opposite the side on which the blood pressure is taken is placed in ice water (4-5 C.) up to the wrist for exactly one minute, readings of pulse and blood pressure being taken when it has been in the water for thirty seconds and again when the hand is removed at exactly the end of a minute. Following this, readings of pulse and blood pressure are taken every minute for an additional five min-

utes. The patient then assumes the standing position again and the cold test is repeated in the upright position exactly as it was performed in the horizontal position, five readings of pulse and blood pressure preceding and following the one-minute period of stimulation by cold. It is advisable to use a mercury manometer. The systolic level is the first audible sound, which is generally heard just above the level at which the radial pulse can first be felt to come through. The diastolic level is taken as the fading point just above the disappearing point. There is no objection to recording both diastolic levels. The readings may be taken by a physician, but preferably by a trained technician, in order to avoid the pressor effect of the presence of a physician. Every attempt is made to study the hypertensive state at its basal level.

A sedative test is performed as follows: After a light supper the patient is given 3 grains of sodium amytal p.o., at 7:00, 8:00, and 9:00 P.M. (a total of 9 grains) and an hourly blood-pressure and pulse chart is kept from 7:00 P.M. to 7:00 A.M., stating whether the patient is asleep, drowsy, or awake at each reading.

Following operation, many of these tests have been repeated, first at the end of one year, and at annual or biennial periods thereafter. It was originally intended that the patients be rehospitalized for postoperative study. However, the

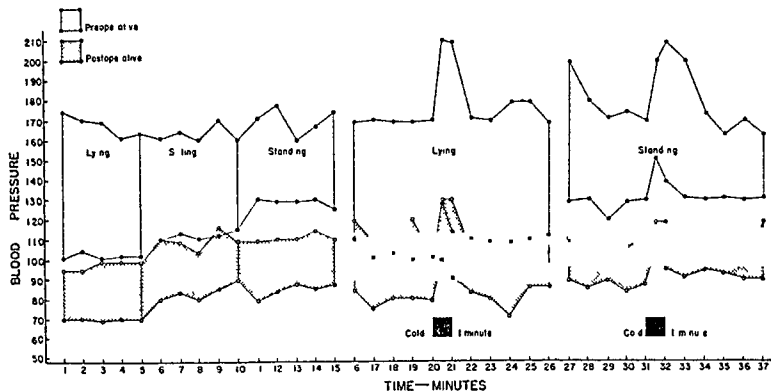


FIG 4 Type 2 hypertension. A Group 1 result. Blood pressure (lying) 167/102 before and 97/69 nineteen months after operation. A 32-year-old woman, Grade 4 eyegrounds, normal cardiac function, and slight impairment of renal function, response to sedation 120/90.

shortage of beds resulting from the war has made it necessary to study the cases in an ambulatory fashion. Consequently, the postural and cold blood-pressure test has been repeated fifteen to twenty minutes after entrance to the hospital. The postoperative blood pressure data are therefore not strictly comparable to the preoperative. Other blood-pressure data are available, but none obtained in as near a standard and comparable fashion as this. Various illustrations of the postural and cold test before and after operation are shown in Figures 1-7.

The preoperative diastolic level is the average of the five readings in the resting horizontal position. The systolic level is the average of the five comparable readings. The pulse pressure is the difference between the two. The types are determined as follows. In Type 1, the pulse pressure is less than one half the diastolic pressure. In Type 2, the pulse pressure is equal to or up to 19 mm more than one half the diastolic level. In Type 3, the pulse pressure is 20 mm or more greater than one half the diastolic level. In Figs 1-7, the postoperative blood pressure data are cross hatched. The result of operation has been judged by the difference in the average of the five diastolic blood pressure readings in the first portion of the test, the lying level before and after operation.

In the rules to be suggested, some reference to eyeground changes is made. So far a very simple classification has been used which will be amplified later. Grade 0 eyes are normal and Grade 1

eyes have changes other than arteriovenous compression, hemorrhage, or exudate, or measurable elevation of the disks, or papilledema. Grade 2 eyes are those with arteriovenous compression but without hemorrhage, exudate, or papilledema. Patients with Grade 3 eyes have hemorrhages and/or exudate without papilledema. Grade 4 eyes have papilledema, generally with hemorrhage and/or exudate with any or all types of arterial change.

The 36 known deaths which have followed the surgical treatment of over 500 patients during the past six years have been divided into three groups—operative deaths, deaths within one year, and deaths over one year following operation. The number of cases in each group was approximately the same—13, 12, and 11, respectively. All but 4 were the result of complications of the disorder—cardiac, cerebral, or renal. All of the unrelated causes of death occurred in female patients, of which 2 were operative deaths due to pneumonia and bilateral pneumothorax, and 2 occurred within one year, because of meningitis and peritonitis. Of the 32 remaining deaths, 29 were in male patients and 3 in females, a striking sex predominance, particularly since female patients exceeded males in the series as a whole 56 per cent to 44 per cent.

Of the 179 living patients, the number of cases in each of the five groups of results as judged by the change in the diastolic pressure following operation was 75, 32, 35, 21, and 16, respectively.



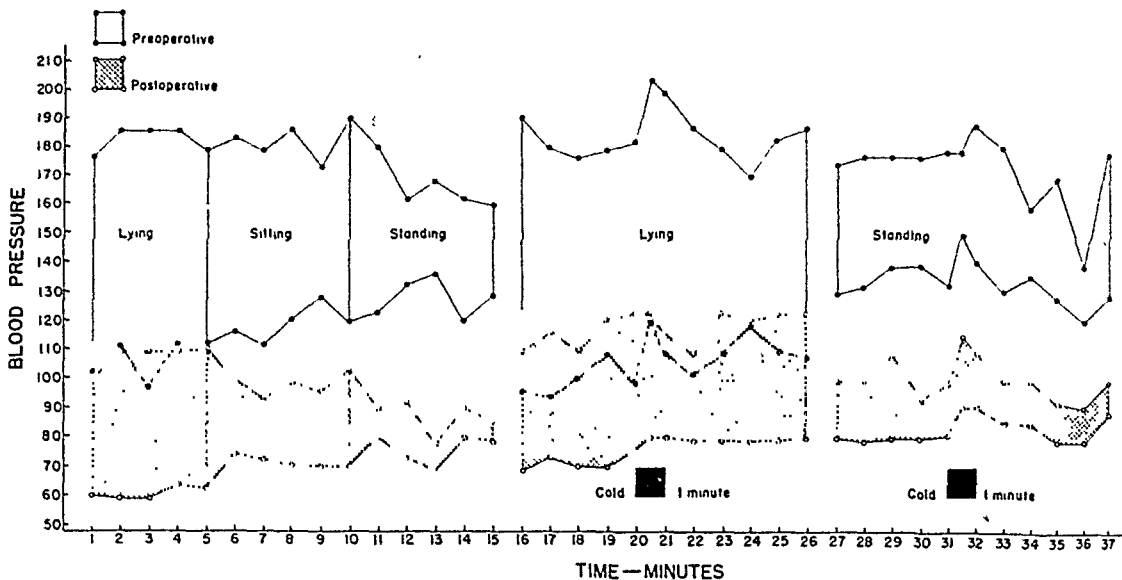


FIG. 5. Type 2 hypertension. A Group 1 result. Blood pressure (lying) 190/116 before and 117/70 one year after operation. A 40-year-old woman, Grade 0 eyegrounds, normal cardiac and renal functions; response to sedation 130/90.

These results as well as the 36 deaths have been critically reviewed when divided into the previously mentioned thirty groups according to the two sexes, three types, and five levels of preoperative diastolic pressure. With reference to the latter, the five levels contain cases with preoperative diastolic pressures of 100–109, 110–119, 120–129, 130–139, and 140 and over, respectively. There are thus thirty possible combinations of type, sex, and diastolic blood pressure level. Examples of all of these exist except Type 3 men, 130–139, and type 3 men, 140 or over. The number of cases in each combination varies from 2 to 15. Such a division places the patients in roughly comparable groups for study. These, however, must eventually be further subdivided according to the many other variables such as age, the state of the brain, eyes, heart, and kidneys, as well as arteriolar disease as judged by biopsy material.

The cases in these thirty subdivisions have been studied with a view toward reducing the mortality and the Group 5 results in particular. It appears that most of the deaths and poorest results following lumbodorsal splanchnicectomy have occurred under certain circumstances. The most obvious of these are as follows and might be tentatively considered as contraindications to surgery:

1. In the presence of congestive heart failure and impaired kidney function as indicated by an elevated nonprotein nitrogen or a reduction in the

intravenous phenolsulfonephthalein output to below 15 per cent in the first fifteen minutes.

2. In male patients with resting diastolic levels of 140 or more, operation does not appear to be advisable unless there have been no cerebral vascular accidents or episodes of encephalopathy, and there is no evidence of actual or impending cardiac failure, and the kidney function is normal or near normal as indicated by an intravenous phenolsulfonephthalein output of 20 per cent or more in the first fifteen minutes.

3. In women patients with resting diastolic levels of 140 or more, the same rule as for men should be observed with the exception that operation may be performed in the presence of impaired renal function providing the intravenous phenolsulfonephthalein output is 10 per cent or more in the first fifteen minutes.

4. For patients with lower diastolic levels the following tentative suggestions are made:

- (a) Type 3 males with Grade 3 eyes, levels 100–109 and 110–119, have so far done poorly almost regardless of any other factor. The same applies to type 3 women with Grade 3 eyes, level 110–119, except those with a normal kidney function (phenolsulfonephthalein output of 25 per cent or more in the first fifteen minutes) and a good response to sedation (a diastolic fall to 90 or less).

- (b) Men and women with levels 100–109 and 110–119, of any type, ages 48–57, with previous

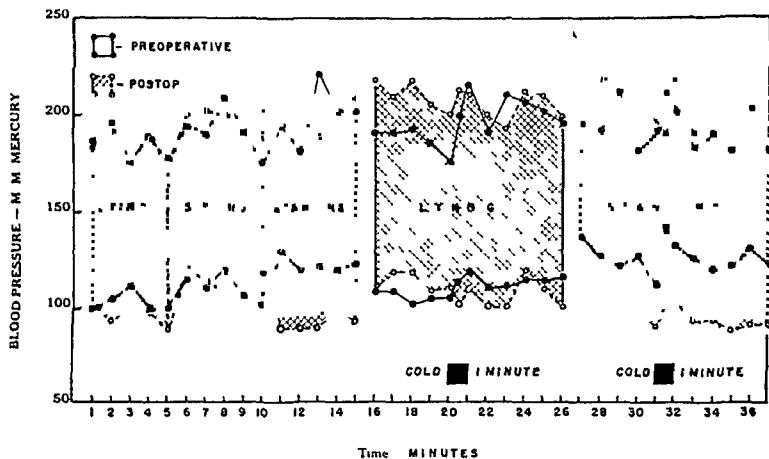


Fig 6 Type 3 hypertension A Group 4 result Blood pressure (lying) 184/101 before and 186/96 one year after operation A 49-year-old woman, Grade 1 eyegrounds, cardiac and renal functions normal, response to sedation 130/65

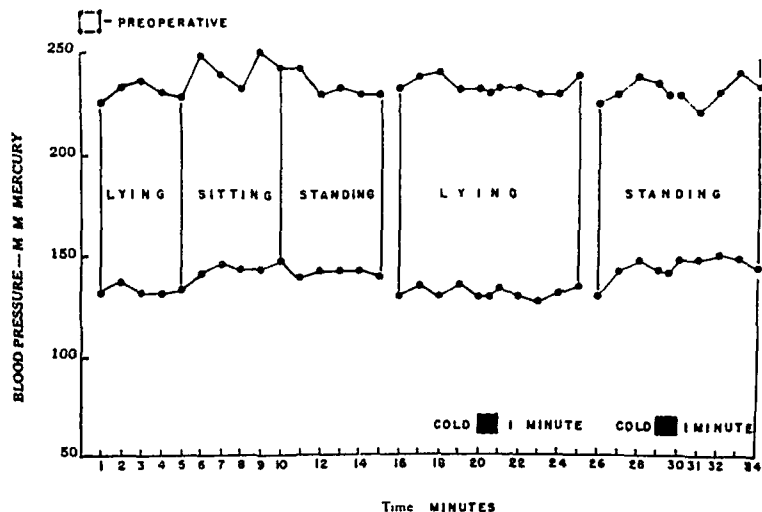


Fig 7 Type 3 hypertension A previous cerebral vascular accident (phenolsulfonephthalein output patient died within a year after operation)

49-year-old woman, poor kidney function 210/132 This

TABLE 1.—MORTALITY FOLLOWING LUMBODORSAL SPLANCHNICECTOMY

Number Affected by	No. Deaths	Operative	Within 1 Year	1 Year or More
Rule 1	36	13	12	11
Rule 2	7	3	4	0
Rule 3	9	3	3	3
Rule 4	3	2	1	0
Rule 4	13	5	3	5
Number after applying rules	4	0	1	3

cerebral accidents and Grade 3 eyes and a poor response to sedation did poorly. Under the same conditions, those with lesser eyeground changes and congestive failure or poor kidney function (phenolsulfonephthalein output 10-15 per cent in fifteen minutes) also did poorly.

(c) Type 1 and 2 males, level 120-129, aged 38 or more, with Grade 3 and 4 eyeground changes, have not done well unless the kidney function was normal (phenolsulfonephthalein output of 25 per cent or more in fifteen minutes). Similar cases without retinitis or papilledema but with a marked reduction in kidney function (phenolsulfonephthalein output of 5-10 per cent in fifteen minutes) have not done well.

(d) Type 1 females, level 120-129, have so far done poorly when the diastolic level did not fall to 100 or less on sedation.

(e) Type 2 males, level 130-139, with Grade 4 eyes have done poorly when the kidney function was below 25 per cent in fifteen minutes.

(f) Of type 3 females, level 130-139—2 patients with Grade 3 eyes did poorly, one with normal kidney function and a poor response to sedation (see (a)); and the other with a previous cerebral accident and a poor response to sedation (see (b)).

The effect of these four rules upon the mortality and the results in the living patients, when applied to the 215 cases under discussion, is shown in Tables 1 and 2, respectively.

It should be noted that a marked reduction in the deaths and in the Group 5 results has occurred at the expense, however, of one Group 1 result and two Group 4 results. In all three instances, these particular cases have been clinically worth while. It would seem, however, that this is not too great a price to pay for the marked re-

TABLE 2.—RESULTS FOLLOWING LUMBODORSAL SPLANCHNICECTOMY

Number Affected by rules	No. Living Patients Followed 1-5 Years	Effect Upon Blood Pressure				
		Group 1	Group 2	Group 3	Group 4	Group 5
Number	179	75	32	35	21	16
Number after applying rules	163	1	0	0	2	13
		74	32	35	19	3

duction in total mortality and the poorer results. All of these rules should at this time be regarded as tentative suggestions to be amplified and modified as our experience increases. There still is considerable room for improvement so far as the accurate selection of patients for operation is concerned. These suggestions may, perhaps, be of some help to those who are concerned with the surgical approach to this complicated problem.

### Summary

Certain suggestions are made regarding the selection of hypertensive patients for surgical treatment. These are based upon a review of the data available concerning 215 patients who have been treated by lumbodorsal splanchnicectomy. These suggestions are directed primarily at reducing the mortality and the poorer results.

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### CHURCHILL ON HEALING SCIENCE

The discoveries of healing science must be the inheritance of all.

That is clear. Disease must be attacked whether it occurs in the poorest or the richest man or woman, simply on the ground that it is the enemy; and it

must be attacked just in the same way as the fire brigade will give its full assistance to the humble cottage as readily as it will give it to the most important mansion.—Winston Churchill, *Lancet*, March 11, 1944

# BIOCHEMICAL FACTORS INFLUENCING WOUND HEALING

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ONLY within recent years have surgeons begun to appreciate the fact that the rate and efficacy of wound healing are dependent in no small measure upon several important biochemical factors. These may be tabulated as follows: (1) the ascorbic acid (vitamin C) content of the tissues, (2) the protein concentration of the serum, (3) carbohydrate metabolism, and, to a limited extent, (4) calcium and phosphorus metabolism (in the healing of fractures).

As far as is known at present, these four factors affect wound healing specifically, although it has been stated that the over-all picture may be modified by the general status of body nutrition and perhaps by vitamins other than ascorbic acid. There is little or no evidence that such is actually the case.<sup>1</sup> Poor body nutrition (and weight loss) will be reflected in depleted serum proteins and not infrequently in a decreased concentration of ascorbic acid in the tissues as well, thus influencing the processes of tissue repair.

The present discussion does not embrace local factors deterring the healing of wounds. It is obvious that imperfect suturing, activity on the part of the patient, coughing, straining, or rough handling on the part of attendants disturb the adherence of the wound edges. Moreover, excessive trauma, infection, strangulation of tissue, the presence of foreign bodies, and excessive tension are important local factors predisposing to poor wound healing.<sup>2</sup> We are concerned here with the less apparent though equally important general factors influencing tissue repair.

## Ascorbic Acid (Vitamin C)

Twenty-five years ago, it was observed that in scurvy the main primary deficiency was a lack of intracellular cement substance.<sup>3</sup> Since then, it has been demonstrated frequently that an adequate concentration of vitamin C in the tissues is a necessary prerequisite for normal wound healing, since this vitamin is essential for the maturation of procollagen to the collagen of fibrous tissue.<sup>4,5</sup> Apparently this vitamin is also essential in the healing of fractures, since the production of osteoblasts appears to be dependent upon the vitamin C content of the tissues.

In guinea pigs, wound healing is retarded when the animals are kept on a subscorvy diet. The tensile strength of wounds is about one half of

normal on the sixth postoperative day and about one quarter of normal from the eighth through the fourteenth days. The addition of high vitamin C dosage to the diet of such animals postoperatively permits the wounds to reach the same tensile strength by the eighth postoperative day.<sup>2</sup> In human subjects, it has been found that a sufficient depletion of vitamin C produces a decreased ascorbic acid content and tensile strength in healing wounds in the skin and fascia. A fasting plasma ascorbic acid level below 0.20 mg. per 100 cc. must be reached before these changes occur.<sup>6</sup>

Many chemical and biophysical procedures have been devised in order to evaluate vitamin C deficiency; these have recently been reviewed critically.<sup>7</sup> Three methods will be described briefly here: (1) the fasting vitamin C content of the plasma, (2) the vitamin C saturation test, and (3) the tourniquet test (Rumpel-Leede phenomenon).

The normal fasting vitamin C is stated to range from 0.7 to 1.4 mg. per 100 cc. of plasma. A deficiency in plasma vitamin C usually reflects an inadequate concentration of this vitamin in the tissues in spite of the fact that the dietary history may indicate an adequate consumption of citrus fruits. For reasons that are not as yet too clear, some persons either fail to absorb this vitamin from the gastrointestinal tract or are unable to store it in the tissues.

The vitamin C saturation test is a valid procedure, perhaps more so than the fasting ascorbic acid content of the blood, for gaging the tissue content of this vitamin. In this test, the patient voids and discards the urine, then 1 Gm. of ascorbic acid (dissolved in 10 cc. of saline or water) is injected intravenously and the urine is collected for exactly five hours after the injection. If the tissues contain adequate amounts of this vitamin, more than 450 mg. of ascorbic acid are excreted in the five-hour urine. Obviously, in persons with deficient stores of vitamin C, the greater part of the injected vitamin is absorbed by the tissues and decidedly less than 450 mg. are excreted in five hours.

The tourniquet test, unlike the two procedures described above, requires no chemical analyses. The test has recently been modified as follows:<sup>8</sup> a circle the size of a twenty-five-cent piece is drawn 4 cm. below the crease of the elbow on the inner aspect of the forearm. The blood-pressure manometer is then applied as usual upon the upper part of the arm and inflated to a pressure midway between the diastolic and systolic pres-

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Presented before the Clinical Society of Reconstruction Hospital, New York City, December 15, 1943.

sure of the patient. This is maintained for fifteen minutes, after which the pressure is released; at the end of five minutes the number of petechiae within the circle is counted with the naked eye. A normal count is rarely above ten petechiae. In the presence of vitamin C deficiency the associated increased capillary fragility is reflected in high petechial counts. It should be noted that the tourniquet test will give false positive reactions in the blood dyscrasias—e.g., leukemia, polycythemia vera, thrombocytopenic purpura, etc. Again, negative results will be obtained in patients with vitamin C deficiency in the presence of moderate or severe anemia, primary or secondary.

Delayed or imperfect wound healing in the presence of ascorbic acid deficiency is best treated by the liberal use of crystalline vitamin C. This material may be administered intravenously in daily doses of  $\frac{1}{2}$  or 1 Gm. dissolved in a small volume (10 cc. or 15 cc.) of physiologic saline or distilled water or added to a glucose or glucose-saline infusion if such therapy is being used simultaneously. Vitamin C may be prescribed orally and, in most instances, this route is eminently satisfactory. Tablets of vitamin C containing 25, 50, or 100 mg. each of the crystalline material are obtainable. Three hundred to 500 mg. per day in divided doses may be ordered. Allergic reactions to ascorbic acid are rare; in fact, this vitamin has been used freely in the treatment of various types of hypersensitivity.

### Serum or Plasma Proteins

It is universally appreciated that protein is necessary for the growth and repair of tissues since, fundamentally, tissues are protein in structure. Unlike fat, the reserve store of protein in the body is relatively small (2 Kg.), the energy equivalent of which could supply the basal caloric requirements of the average adult for only five days.<sup>9</sup> Protein deficiency in blood and tissues will arise rather early, therefore, in conditions of protein starvation or inanition.

Tissue and plasma protein deficiency may occur even in the presence of adequate protein intake. The enzymatic hydrolysis of protein and the absorption of the amino acid end-products may be interfered with in patients with achylia gastrica, gastrectomy, jejunostomy, ileostomy, jejunocolic fistula, and diarrhea. In diseases of the liver, this organ may fail to synthesize protein from the amino acids brought to it by the portal vein (e.g., cirrhosis of the liver, hepatitis, chloroform poisoning, thyrotoxicosis, liver abscess, acute yellow atrophy of the liver). Again, protein may be lost in excessive amounts from the body (e.g., suppuration, burns, chronic loss of blood, helminthic infection, nephrosis, frequent

paracenteses, chronic bile peritonitis). The surgeon should remember that the amount of protein lost in pus may range from 8 to 21 Gm. per 100 cc.<sup>10,11</sup> It is obvious from what has been stated above, therefore, that hypoproteinemia may result from prehepatic, hepatic, or post-hepatic causes.<sup>12</sup>

Since plasma protein is in dynamic equilibrium with tissue protein, a deficiency of the former reflects a depletion of the latter. The total serum or plasma proteins vary normally from 6 to 8 Gm. per 100 cc., of which the albumin component ranges from 4 to 5 Gm. and the globulin from 2 to 3 Gm. per 100 cc. The albumin fraction is the important component, since its relatively smaller molecular size compared to the globulin is attended by greater osmotic pressure. This is important, since edema, which interferes appreciably with wound healing, is dependent in no small measure on the osmotic pressure exerted by the serum albumin. In fact, when the total serum protein falls to approximately 5.0 Gm. per 100 cc. or the serum albumin reaches 2.5 Gm. per 100 cc. edema is imminent.

In patients with hypoproteinemia, wound healing is slow and the tensile strength of the wound is decreased. It was shown twenty-five years ago that the latent period in wound healing, that is, the time from the injury up to the time of fibroblast proliferation, may be shortened almost to the point of elimination by a high protein diet.<sup>13</sup> More recently, it was demonstrated that the rate and degree of growth of fibroblasts in wounds may be increased by an augmented protein intake.<sup>14</sup> Still more recently, severe hypoproteinemia has been shown to retard the formation of bony callus in experimental fractures.<sup>15</sup>

Hypoproteinemia not only causes delayed and inadequate wound healing but may be attended by sudden disruption or dehiscence of wounds.<sup>16,17</sup> Recent studies have confirmed these observations, although it must be conceded that decreased serum protein by itself is neither a necessary nor sufficient cause for wound disruption in all cases.<sup>18</sup> Obviously, poor surgical technic and excessive intra-abdominal pressure from any cause would favor wound disruption even in the presence of normal serum proteins. It is of interest to note that wound disruption failed to occur in hypoproteinemic dogs treated postoperatively with lyophilized serum administered intravenously.<sup>19</sup>

Diminished serum proteins further result in delayed gastro-intestinal motility and may cause failure of function of surgical gastro-intestinal stomata.<sup>20</sup> Moreover, the accumulation of edema fluid in the walls of the gut which commonly occurs in nutritional deficiency states interferes with the "take" of the stoma.

Hypoproteinemia is best combated by a high protein diet (2 to 3 Gm. of protein per Kg. of body weight) provided, of course, that such diets can be administered and utilized. It has been calculated that 375 Gm. of protein are required each day for a period of ten days to elevate the serum protein level from 5 to 7 Gm per 100 cc.<sup>21</sup> Whenever possible, surgical patients should be prepared for operation by several days of optimum nutrition, including a well-balanced diet of high protein intake, of high caloric value, and of high vitamin content. It has been stressed that this period of preparation should begin at home ten to fourteen days before the operation.<sup>22</sup>

When the administration of a high protein diet is impossible for any reason or when emergency surgery must be performed in a hypoproteinemic patient, other means of protein administration must be resorted to. For this purpose, whole blood, plasma, or casein digests may be used.

The most efficiently utilized protein in the treatment of hypoproteinemia is plasma,<sup>23</sup> since homologous plasma protein apparently furnishes all the body needs for protein.<sup>24</sup> Two units of plasma (500 cc.) contain approximately 35 Gm. It is obvious that if the total body needs for protein were to be derived from plasma, whole blood, or serum, the cost of such therapy would be prohibitive. Moreover, there is some recent evidence to indicate that the injected plasma protein, especially when administered in large amounts, may not be retained permanently in the blood and tissues of the recipient;<sup>25</sup> this is a rather important finding and certainly requires confirmation.

In the present writer's opinion, casein digests offer a convenient and relatively inexpensive method of administering parenteral proteins. Such hydrolysates\* have been shown to maintain nitrogen equilibrium when injected intravenously<sup>26</sup> or subcutaneously.<sup>27</sup> Ascorbic acid should be given simultaneously, since it has been shown that this vitamin is essential for the proper metabolism of certain amino acids, namely, phenylalanine and tyrosine.<sup>28,29</sup>

The administration of 100 cc. of Stearn's Amino Acids will yield 15 Gm. of protein to the body provided, of course, that the amino acids are completely synthesized to protein by the liver. The contents of one or two bottles (100 cc. or 200 cc.) may be added to 500 cc. or 1,000 cc. of glucose, saline, or glucose-saline solutions and administered intravenously (the subcutaneous, intramuscular, and intrasternal routes may also be used). When parenteral feeding is the only means of sustenance, adequate amounts of carbohydrate must be given simultaneously for its protein-sparing action. It is obvious, therefore, that an infusion of 1,000 cc. containing 10 per

cent glucose and 30 Gm. of amino acids will yield 100 Gm. of glucose and 30 Gm. of protein. In order to offset possible reactions, such as flushing, nausea, vomiting, chills and fever, amino acids should not be administered intravenously too rapidly. Most postoperative patients are able to tolerate from 7½ to 15 Gm. per hour without difficulty.

In the average postoperative patient (without liver dystrophy or undue protein loss) nitrogen equilibrium can be attained by the administration of 1 to 1½ Gm. of protein per Kg. of body weight; a man weighing 150 pounds, therefore, can be kept in good protein nutrition by the administration of 500 cc. to 600 cc. of amino acids per day provided, of course, enough calories in the form of glucose are simultaneously fed or injected. The present writer has had no experience with aminogen; a competent observer has recently described his clinical observations with this material.<sup>30</sup>

### Carbohydrate Metabolism

It is generally appreciated that surgical wounds tend to heal slowly, inadequately, or not at all in patients with uncontrolled diabetes mellitus. The healing of abdominal incisions in dogs rendered diabetic by pancreatectomy has been studied. The repair of these wounds is abnormal compared to the behavior of identical wounds in healthy animals used as controls. Edema of the tissues, delayed and decreased deposits of fibrin, excessive cellular reaction, slow formation of new blood vessels, and frequent thromboses in preformed vessels were noted in the diabetic animals. Healing proceeded normally, however, when the diabetes was well controlled.<sup>31</sup>

The view has long been held that the hyperglycemia in the uncontrolled diabetic (and hence the increased concentration of sugar in the tissues) renders the individual more susceptible to infection. Bacteriologic studies have shown, however, that blood to which varying concentrations of sugar had been added proved to be no better a culture medium for staphylococci than blood without added sugar.<sup>32</sup> Hyperglycemia per se probably does not retard wound healing nor predispose to infection provided that (1) insulin is acting and the metabolism of the tissue cells is not disturbed;<sup>33</sup> (2) the peripheral circulation is adequate;<sup>34</sup> and (3) the resulting glycosuria and concomitant polyuria do not produce excessive dehydration.<sup>34</sup>

It has been observed, nevertheless, that delayed or imperfect wound healing may occur in apparently nondiabetic individuals who manifest a fasting hyperglycemia and impaired carbohydrate tolerance following the ingestion of dextrose.<sup>35,36</sup> Such patients, however, are probably

\* Amino acids, Stearns; aminogen, Mead Johnson.

not true diabetics, since carbohydrate metabolism returns to normal or near normal after recovery from the debilitating illness with closure and healing of the wound. The advantageous use of small doses of insulin in such cases as a means of stimulating wound repair has already been noted.<sup>35</sup> In this writer's opinion, this type of delayed wound healing occurs particularly in the elderly patient in whom the endogenous production of insulin, already diminished by pancreatic arteriosclerosis, is further curtailed by chronic illness, infection, suppuration, etc. Five to 10 units of unmodified insulin given before each meal frequently results in decided clinical improvement both generally and locally.

### Calcium Metabolism

Both normal ossification and the healing of fractures involves the deposition of calcium and phosphorus in an organic matrix situated at the epiphyseal-diaphyseal junction and at the site of the fracture, respectively. The mechanism at work in both instances is probably the same, the latter reflecting the same processes under stress. The various factors involved in ossification have recently been summarized:<sup>37</sup>

1. Adequate concentration of calcium in serum and tissue fluid
2. Adequate concentration of phosphorus in serum and tissue fluid
3. Adequate concentration of phosphatase in the provisional zone of calcification (this enzyme is necessary in order to liberate inorganic phosphorus from organic phosphoric esters at the site of calcification, thus permitting the combination of the released phosphorus with calcium to form calcium phosphate)
4. Adequate intake of calcium and calciferol (vitamin D) (this vitamin favors the absorption of calcium from the intestinal tract)
5. Adequate production of parathyroid hormone (this hormone maintains the calcium content of serum and tissue fluid at normal concentrations by favoring the urinary elimination of phosphorus)
6. Satisfactory pH in the matrix (increased local acidity inhibits calcification)
7. Normal concentration of magnesium in tissue fluid (increased amounts of this mineral also inhibit ossification)
8. Adequate concentration of vitamin C in blood and tissue fluid (the rate and degree of calcium deposition in bone is impaired in vitamin C deficiency<sup>38</sup>).

In the normal adult, the rate at which a fracture heals apparently cannot be augmented by the increased intake of calcium, vitamin D, and vitamin C. Of particular importance is the question whether these factors might influence

delayed union or nonunion of closed fractures. Assuming that local causes can be ruled out, such as deficient reduction, interposition of soft parts, deficient fixation, bone pathology (osteomyelitis, carcinoma, gumma, etc.), and prolonged immobilization with resultant atrophy and osteoporosis, what may be accomplished by general therapeutic measures?

In most cases of delayed union and nonunion, the various factors governing ossification enumerated above appear to play a negligible role, because fundamentally, the extra burden of a fracture is not an excessive strain on the normal mechanism.<sup>39, 40</sup> However, each case deserves a critical survey for possible disclosure of some metabolic abnormality. The following chemical examinations of the blood are in order: (1) serum calcium (to determine the necessity for calcium and vitamin D therapy); (2) serum phosphorus (to determine the necessity for increased phosphorus intake; excessive amounts of inorganic phosphorus cause acidosis, thus inhibiting calcification); (3) vitamin C concentration (the relation of this vitamin to ossification has already been discussed); (4) serum alkaline phosphatase (to rule out bone pathology, viz., Paget's disease, hyperparathyroidism, rickets, metastatic carcinoma to bone, etc.); (5) serum proteins (hypoproteinemia interferes with reparative processes;<sup>41</sup> moreover, a normal serum globulin would tend to rule out multiple myeloma).

In this writer's experience, cases of delayed union or nonunion of closed fractures presenting no obvious metabolic abnormality fail to respond to medical therapy. On occasions, however, calcium or vitamin deficiency will be disclosed and adequate therapeutic measures will be followed by, encouraging clinical results. The administration of androgenic and estrogenic hormones has been advised to stimulate the production of osteoblasts in senile or postmenopausal osteoporosis when found concomitantly with impaired healing of fractures;<sup>42</sup> the present writer has had no experience with sex hormones in this particular field.

Calcium is best administered as milk or as other dairy products. This may be supplemented by liberal doses of calcium gluconate or lactate (heaping teaspoonful) added to the milk and given one to two hours before meals three or four times daily (calcium is more readily absorbed from the fasting gut, since it precludes precipitation of the calcium by oxalates or fatty acids). Vitamin D concentrates (percomorph oil, drisdol, etc.) should be administered simultaneously in 5- or 10-drop doses several times daily to enhance the absorption of the calcium. In the older age group, because of the frequency of achlorhydria, dilute hydrochloric acid in teaspoonful-





# WAR WOUNDS OF COLON AND RECTUM

JOSEPH E. HAMILTON, CAPT., (MC), AUS

ABDOMINAL injuries constitute 2 to 3 per cent of casualties to leave the battlefield and of these Churchill<sup>1</sup> found the colon involved along with other viscera in 59 per cent and the colon alone involved in 36 per cent.

Shrapnel and bullets cause the great majority of intra-abdominal injuries; bayonets and non-penetrating violence cause comparatively few. Blast from bomb explosion, both in air and water, is an occasional cause of nonpenetrating trauma from the concussion of air or water upon the thoracic and abdominal wall. Air blast involves chiefly the lungs, causing patchy subserous and parenchymal hemorrhages. It only rarely produces serious intra-abdominal damage. Bomb and torpedo explosions in water produce varying intra-abdominal injuries in those submerged within a 20-yard radius.<sup>2</sup> In mild cases there are contusions of and hemorrhage into the walls of the colon and small gut, resulting in pain, distention, and occasionally melena. In more severe cases the hollow viscera are ruptured. The victim will usually be in some degree of shock, will complain of severe abdominal pain, and in over half the cases will have the desire to defecate. Nausea and vomiting and a board-like, markedly tender abdomen are the rule.

## Diagnosis

In nonpenetrating injuries, including those caused by blast, the decision must be made whether or not visceral injury requiring surgery is present. In the doubtful case, the procedure of greatest value is to observe closely for a while the patient, who, though not given sedatives, is otherwise made as comfortable and quiet as possible. Increasing pain, persisting local rigidity tending to spread, a gradually rising pulse rate, repeated vomiting, all point to subserosal injury. At all events, if the surgeon is not satisfied within two to four hours that interference is not necessary, he is obliged to operate. As Richard Charles<sup>3</sup> said, "Better to look and see than wait and see."

The decision to be made in the case of knife or projectile wounds is whether or not the peritoneal cavity has been penetrated, since penetration demands exploration. The presence of the entry wound in the abdominal wall is usually sufficient clue, but it must be remembered that bullets or shrapnel entering the chest, back, thighs, or but-

tocks may enter the peritoneal cavity. Of Gordon-Taylor's<sup>4</sup> cases only 60 per cent of entry wounds were in the anterior abdominal wall, while 20 per cent were in the back and 20 per cent in the buttocks. Shock from intraperitoneal bleeding or definite evidence of peritoneal irritation makes the diagnosis, but signs and symptoms of perforation may be surprisingly misleading.<sup>5</sup> Blood in the urine or blood obtained by stomach tube or rectal examination is of positive value. Nerve injury of the lower extremities will help localize the projectile's path. In the rush of the forward areas, x-ray examination for determination of pneumoperitoneum or for the location of a foreign body is seldom feasible. As a general rule, then, laparotomy must be performed at once if there is any likelihood of peritoneal perforation.

## Prognosis

The mortality from large bowel injuries so far in this war is probably in the vicinity of 50 per cent. In Table 1 are listed the statistics collected by the surgical consultants for three theaters of operations.

In injuries of the colon alone, hemorrhage is a less serious danger than is peritonitis. However, in the majority of cases other injuries coexist, such as laceration of liver or spleen, small bowel, mesenteric vessels, etc., in which severe bleeding is the rule. The dominating influence of hemorrhage on the outcome of penetrating abdominal injuries is shown by our Louisville General Hospital series.<sup>5</sup> The mortality of penetrating abdominal injuries with less than 500 cc. hemorrhage was 17.2 per cent. The mortality was 41.5 per cent with blood loss of 500 to 1,000 cc., and 64.6 per cent when it exceeded 1,000 cc. In this same connection Loria<sup>7</sup> quotes a mortality of 11.9 per cent in cases with slight hemorrhage, 39.2 per cent with moderate hemorrhage, and 93.2 per cent with large hemorrhage.

## Treatment

*Prophylaxis.*—Perhaps this may sound futile, considering the inevitable hazards of battle, but certain simple, self-protective measures are taught to combatants for use during bombings and strafings. The soldier jumps out of any vehicle he may be in and flings himself flat, face downward. If there is no ditch or slit-trench handy, he should press himself against a solid object such as the base of a wall, rock, etc. Sailors are taught to paddle away from the site of imminent explosion, in their life belts, belly up and feet first. Thus the back and not the abdo-

Read by invitation at the Annual Meeting of the Medical Society of the State of New York, New York City, May 11, 1944.

From Walter Reed General Hospital, Washington, D.C.

TABLE 1.—MORTALITY OF WAR WOUNDS OF RECTUM AND COLON

Authority	Colon	Rectum
"	60%	48%
"	50%	71.4%
"	34.5%	

men receives the impact of the concussion. This also prevents the funneling of water into the anus and rupture of rectosigmoid that occasionally occur when, in swimming away head first, the perineum is presented to the blast.

**Preoperative Care.**—If a soldier with an early perforating belly wound is found in shock he is almost certainly bleeding briskly internally. To delay surgery, hoping to bring him out of shock by the usual rest, warmth, and intravenous infusion of blood and plasma may be fatal. Intra-abdominal bleeding is active and does not tend to cease spontaneously. It is obviously futile, then, to expect even rapid intravenous replacement to compensate for vigorous bleeding from torn vessels. The earliest possible operation and ligation of bleeders is essential. It is of utmost importance, however, that plasma, or preferably blood, should not be delayed but should be running into a vein as rapidly as possible while the operation is going on.

Shock, when present in patients who have survived several hours before reaching the base, may be due to other causes besides hemorrhage, and in these some preoperative intravenous protein therapy may be indicated if it is not continued too long.

Preoperative passage of a stomach tube, to be connected with suction, is valuable, especially in upper gastrointestinal injuries.

**Anesthesia.**—The type of anesthesia used is less important than the expertness of the anesthetist. Spinal anesthesia is ideal when shock is not present. Ether, by closed system, with adequate oxygen is an alternative. In the forward areas pentothal has been used extensively and with satisfactory results. Churchill<sup>1</sup> emphasizes that intense pneumonitis from aspiration of gastric contents occurs more frequently than is realized and that the anesthetist should be prepared to perform bronchoscopy on the patient if aspiration is suspected.

**Incision and Closure and Debridement of Entry Wounds.**—For most purposes, a generous midline or paramedian incision is the most practical. A transthoracic approach<sup>14</sup> may be advisable when the missile crosses the upper diaphragm and abdomen, especially on the left side, and when major thoracic as well as upper abdominal injury

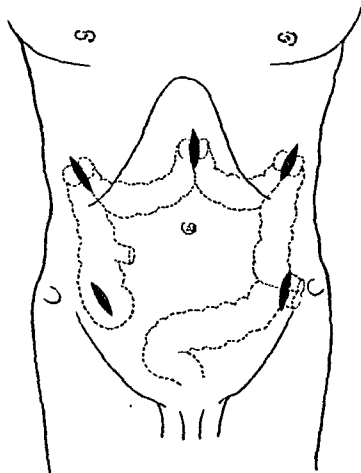


FIG. 1. Sites of election for colon exteriorizations in war injuries (borrowed from Col. F. S. Gillespie, RAMC).

is suspected. Closure by means of through-and-through heavy, nonabsorbable sutures can be rapidly done and will give the strongest wound and the one least likely to become infected.

An interesting fact pointed out by Gordon-Taylor<sup>5</sup> and Stabler<sup>6</sup> in reference to débridement of entry wounds is that such wounds, when located in the back or buttocks, should be excised before laparotomy, because rolling a severely wounded patient into a prone position after he has undergone extensive surgery lying on his back may throw him into severe shock.

**Exploration.**—The first concern in cases coming to the table in shock is the control of hemorrhage. With a foreknowledge of the approximate path of the slug, the surgeon can examine the most likely sites of hemorrhage first. Suction is of the greatest value in clearing the field of blood and clots. Blind clamping for bleeders is futile and dangerous. Proximal digital compression of large vessels until their bleeding points can be identified and controlled saves valuable time and blood; thus, bleeding from a laceration in the liver can be controlled by compressing the hepatic artery and portal vein through the foramen of Winslow. Likewise, mesenteric hemorrhage can be controlled by pinching the superior mesenteric or one of its branches. In this connection Ogilvie<sup>7</sup> made the dictum "no mass ligation, no stitches, no catgut." Mass ligation may

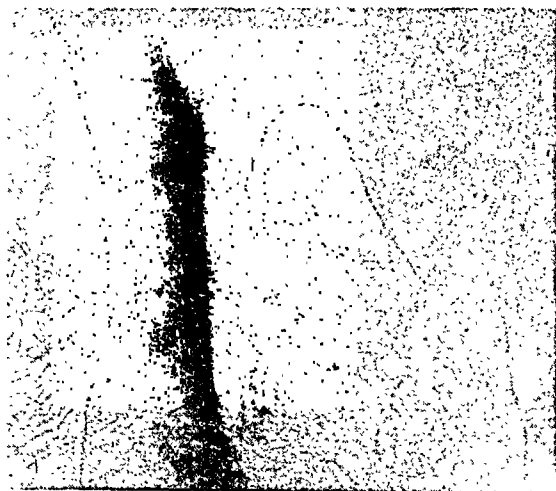


FIG. 2. Case 1. Shrapnel entry wounds, right buttock.

imperial too much blood supply; stitches or suture ligature will usually start up fresh bleeding. Silk or cotton ligature is preferable to catgut, which may slip off. In short, expose the bleeder, clamp and ligate with silk or cotton tie.

With the hemorrhage stanching an orderly search must be made for injury in all viscera, solid as well as hollow, that could possibly have been damaged. The transverse colon is inspected to both flexures and from there to the cecum on one side and to the rectum on the other. A very practical maneuver used by Major Foster, RAMC, was passed on to me by one of the American surgeons working with him. When there is a question whether or not a bullet which entered the buttock or perineum might have penetrated the true pelvis or pouch of Douglas, simply swab the pelvis with a sponge stick. Absence of blood on the sponge rules out perforation. Time is saved in the small bowel survey by placing a Babcock forceps on the first loop picked up and then, with this as a marker, reading both ways to the ligament of Treitz and to the ileocecal valve.

**Repair.**—The guiding principle of military surgery of the colon is to exteriorize the damaged segment if at all possible. The colon beyond the proximal ascending portion should, when perforated, be exteriorized through a small separate muscle-splitting incision placed in the lateral abdominal wall, as illustrated in Fig. 1. A single small laceration may be placed at the apex of a knuckle colostomy. In case of more extensive damage, whether from impaired blood supply or large or multiple lacerations, a double-barrel type colostomy should be constructed, and if time permits, the two limbs should be sutured together for 3 or 4 inches to create a spur that can be later crushed to restore continuity. Even



FIG. 3. Case 1. Showing original exploratory incision and exteriorization of sigmoid.

lesions of ascending and descending colon can be exteriorized in many cases if the avascular external leaf of mesentery is divided and the bowel and its mesentery, including hepatic or splenic flexure, be freely mobilized medially. If exteriorization is impossible, the lacerations should be sutured (transversely to the long axis of the bowel) and a proximal colostomy for exclusion performed. When a perforated colon must be sutured it is important to remember that, except in occasional tangential injuries, one hole means another one on the other side of the gut to be found and sutured.

Wounds of the terminal ileum, cecum, and ascending colon, other than a simple cecal perforation that can be converted into a tube colostomy, present an unsettled problem because of the hazard of irritating ileostomy drainage. Churchill<sup>1</sup> advocates in early favorable cases transplanting ileum into colon distal to the injury and exteriorizing the damaged segment. In less favorable cases he presents the alternatives of a Mikulicz type of resection of terminal ileum and colon, or bringing out the ileal and colonic limbs through separate incisions in the right lower quadrant



FIG 4 Case 2 Barium study revealing short fecal fistula of descending colon



FIG 5 Case 2 Showing (1) entry and incision and drainage wound, left iliac region, (2) left McBurney incision for closure of fecal fistula, (3) original exploratory incision, (4) transverse colostomy closure wound

and subcostal region, respectively. Blackburn<sup>10</sup> prefers in most cases simply to suture the lacerations and leave the bowel within the belly.

Where there is perforation of rectum or anus above the sphincter a proximal double barrel inguinal sigmoidostomy for exclusive is performed. The perforations themselves may be inaccessible for suture. The possibility of injury to rectum or of intraperitoneal penetration should be kept in mind in all entry wounds around the buttocks, upper thighs, and perineum.

Whenever retroperitoneal tissues are soiled with lower bowel contents, drainage should be established through the flank. Perforation of rectum or anus requires free drainage posteriorly. In some cases this may be facilitated by excision of the coccyx.

**Chemotherapy**—The forward surgeons seem unanimous in advocating prophylactic sulfonamides, though there is not, as yet, a consensus as to the relative merits of local and general administration. The U.S. Army stresses the oral and parenteral routes. Sulfadiazine is now becoming

popular. It is interesting to note that as the time lag between injury and operation increased (and with it the incidence of peritonitis might be expected to increase), the effectiveness of the sulfadiazine became increasingly apparent.

We employ a preoperative course of sulfasuxidine before all elective bowel surgery. This, together with a proper maintenance of red cells, proteins, and vitamins, has proved to be the greatest protection against infection we have yet encountered.

**Antishock Measures**—In the early hours after operation, the tendency to shock should be vigorously combated by blood and plasma infusion. Increasing emphasis is being placed, especially by the British, upon the superiority of whole blood over plasma in combating shock, particularly that due to hemorrhage. Oxygen either by nasal catheter or tent, if available, is valuable in correcting tissue anoxemia.

**Decompression** by Wagensteen suction applied to a simple stomach tube is mandatory in all bowel cases until the threat of ileus is past. Likewise of great importance is thorough dilatation of the anal sphincter at the conclusion of the operation, and the periodic passing of the rectal tube thereafter till the patient begins to expel gas spontaneously.

**Evacuation to the Rear**—This entirely military problem is one of the most important to the sur-

TABLE 2.—EFFECT UPON MORTALITY OF INTRAPERITONEAL SULFADIAZINE THERAPY

Hours between Injury and Operation	Mortality	
	With Sulfa (Percentage)	Without Sulfa (Percentage)
1-12	48.1	48.4
12-24	40.0	51.2
24-48	35.7	44.0
Over 48	50	75

vival of the abdominal case. Only severe burns approach abdominal injuries in their inability to stand transportation. One of the most essential requirements to the safe outcome of these patients is the assurance of a seven- and preferably a ten-day stopover after operation. Yet the briefest possible delay should be allowed in getting the soldier with abdominal wounds to surgery. For this reason, most of these patients are operated upon at the surgical unit that happens to be attached to the casualty clearing station three to ten miles behind the front lines.

**Maintenance of Nutrition.**—The importance of postoperative maintenance of hemoglobin, red cells, proteins, and vitamins is becoming generally appreciated. That a patient may have the best chance of sound healing and avoidance of complications his red cells *must be made* to number at least four million, his hemoglobin at least 80 per cent, his plasma proteins at least 6.0 Gm., and his vitamin intake must be assured by one or two multivitamin tablets thrice daily. The fact that some patients will get well after operation even though they have anemia and hypoproteinemia and vitamin deficiency is no argument to the contrary. The above requirement is met by supplementing a high-calory, high-carbohydrate, and high-protein diet with vitamins, ferrous iron, whole blood, and the new amino acid preparations for oral and intravenous use. These last are cheaper and probably more effective in restoring tissue and plasma proteins than is plasma.<sup>11</sup>

### Management of Late-Stage Injuries

When the soldier, surviving colon injury, reaches us at the general hospital in the zone of the interior, he presents a colostomy and, unfortunately, he often also presents other disabilities such as abdominal sinuses, nerve injuries, extremity amputations, etc. The best way to describe this final phase of treatment will be to present illustrative cases.

### Case Reports

**Case 1.**—The patient was wounded in the right buttock and lower leg, on February 16, 1943, on Anzio beachhead, by mortar shell fragments. Fig. 2 shows the entry wounds in the right buttock. There were no exit wounds. At an evacuation hospital ten hours later exploration through a low mid-

line incision revealed perforation of sigmoid and small gut. The perforations of the small bowel were sutured and the sigmoid was exteriorized through the left groin. Later that day amputation of the right leg was performed. The soldier made a smooth convalescence and arrived at Walter Reed General Hospital in good general condition with a well-functioning sigmoidostomy (Fig. 3).

**Comment.**—This case illustrates the potential abdominal injury associated with entry wounds of the buttocks. Although no record is available, we may assume that the gluteal entry wounds were débrided before the abdominal exploration. It yet remains to apply a spur-crushing clamp and then to close the stoma. The patient will be placed upon sulfasuxidine both by mouth and as an irrigant of the distal rectosigmoid for five days before operation.

**Case 2.**—In Tunisia, on April 29, 1943, the patient received a shrapnel fragment in the left side which fractured the left iliac crest, lacerated the sigmoid colon, and was retained in the abdomen. He took sulfa tablets at the time of injury and received plasma therapy for shock twelve hours later at a field hospital, which he reached after a four-hour litter carry though the hills followed by a four-hour ambulance ride. The following morning, the soldier was transferred by ambulance to an evacuation hospital where, under inhalation anesthesia twenty-six hours after injury, abdominal exploration was carried out. The lacerations of the descending colon were sutured but not exteriorized. On May 20, 1943, three weeks later, two fecal fistulas formed in the region of the entry wound. In late June an abscess developed in the left flank and on July 9, 1943, a transverse colostomy for exclusion was carried out and the abscess was drained by an incision connecting the two fecal fistulas, and several pieces of necrotic ileum were removed. The soldier arrived at Walter Reed General Hospital September 18, 1943, and at this time he presented, in addition to the transverse colostomy, a single small fecal fistula just above the left iliac crest. A barium enema, with a probe inserted into the tract (Fig. 4), revealed what appeared to be a very short fistula connecting with the colon through the defect in the iliac crest. On October 14, 1943, after five days' preparation with sulfasuxidine, through a left McBurney incision, the descending colon was freed from the fistula and closed transversely. The transverse colostomy was closed November 9, 1943. Persistence of discharge (nonfecal) through the fistula necessitated a final débridement on February 11, 1944, of the region around the left iliac crest and the removal of a small piece of shrapnel originally thought to be of no significance. Final healing occurred April 10, 1944 (Fig. 5).

**Comment.**—It probably would have been better judgment in this case, especially in view of the prolonged time-lag between injury and operation, to have simply exteriorized the laceration of the descending colon. If this were impossible, a



FIG. 6. Case 3. Lipiodol study of branching abdominal sinus tract.



FIG. 7. Case 3. From patient's right to left. (1) Exit wound over right greater trochanter. (2) Incision for ureterovesical anastomosis. (3) Suprapubic sinus opening. (4) Original lower midline exploration incision. (5) Transverse colostomy closure wound.

proximal colostomy of discontinuity should have been done.

**Case 3.**—On April 23, 1943, near Mateur, the patient was wounded by a sniper's bullet which entered just above the left greater trochanter, traveled transversely across the pelvis, and made its exit just above the right greater trochanter. In transit it perforated the sigmoid and ileum, severed the right ureter just above its junction with the bladder, and injured the right lumbosacral plexus. Two or three hours later, at an evacuation hospital, the abdomen was explored through a low midline incision. The perforations of the ileum and sigmoid were sutured, a suprapubic cystostomy was performed, and the belly was closed without colostomy or exteriorization of the sigmoid. The soldier had a stormy postoperative course. A transverse colostomy was done June 4, 1943, because of a fistula between the bladder and the colon. He reached Walter Reed General Hospital September 16, 1943, 42 pounds underweight, with a functioning transverse colostomy, a urinary fistula at the site of the old cystostomy, and right lower leg paralysis, chiefly paroneal. On the urologic section on October 12, 1943, the right ureter was successfully implanted into the bladder. The patient was then transferred to the general surgery section and a lipiodol study on November 24, 1943 (Fig. 6) revealed a sinus extending into the pelvis from just above the right trochanter. Here it forked, one branch extending anteriorly to the old cystostomy wound, the other backward to a puddle between rectum and sacrococcyx. There was also a superficial tract extending up and backward around

the right ileum. Cystourograms and methylene blue studies ruled out any connection with the ureter or bladder. On December 3, 1943, the coccyx was excised and the retrorectal pocket was explored. A quantity of necrotic tissue but no foreign bodies were evacuated. The transverse colostomy was closed January 3, 1944. Some calcareous material was discovered in the persisting tracts and this was largely dissolved by irrigations with Subey's solution. On April 11, 1944, the three limbs of the sinus (right trochanteric, suprapubic, and coccygeal) were curetted under anesthesia as far as could be reached. At the present time, although considerable shrinkage has occurred, the suprapubic and coccygeal branches still persist and communicate.

**Comment.**—Here again the sigmoid perforation should probably have been exteriorized at the original operation. Failure to discover and repair the severed right ureter under the circumstances is understandable. The general management must have been good to have salvaged at all this soldier with his many injuries. The sinuses still present a problem. Should they persist much longer, a radical extra- or transperitoneal exploration through the right abdomen is contemplated. From the much-scarred abdomen shown in Fig. 7, it is obvious that this will be a formidable procedure. Needless to say, any

neurosurgery on the right lumbosacral plexus has been thus far out of the question. However, the soldier walks fairly well with his spring toe-drop brace.

### Summary

1. The cause, diagnosis, prognosis, and surgical management of war wounds of the colon and rectum are presented.

2. The following special factors peculiar to war surgery are stressed:

(a) The necessity of exteriorizing injuries of the colon.

(b) The problem of evacuation of the abdominal case.

3. Cases are presented to illustrate the late management of injuries of the colon and rectum in the zone of the interior.

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### Discussion

Dr. A. W. Martin Marino, *Brooklyn*—It is easy to see from what we have just heard that our fighting men are receiving as fine surgical care as is possible under battle conditions. Although the incidence of abdominal injuries is only 2 or 3 per cent, we can

understand the importance of prompt and proper attention to such injuries. The measures employed immediately after the injury will govern what and how much can be done for the wounded soldier later on. The very orderly and rational routine presented by Captain Hamilton certainly leaves no room for criticism.

It seems to me that the points to emphasize are: first, to operate if there is any doubt of intestinal involvement; second, to use the utmost gentleness in exploring the peritoneal cavity. The performance of an exploratory laparotomy with negative findings is infinitely less risky than the postponement of operation in a patient with a perforated intestine. An anesthetic which permits the patient to be perfectly relaxed helps considerably in the employment of gentleness.

Exteriorizing operations are most logical when time is an important factor, and when the poor condition of the patient prohibits more extensive surgery. It must be kept in mind that when first seen these patients have not received any preoperative preparation, so that only absolutely essential surgery is permissible.

In examining the small and large intestine for perforations and tears, a definite, systematic search, as described by the speaker, saves time and helps prevent shock. The placing of a black silk suture superficially in the mesentery or the wall of the first loop of intestine which presents itself, as described by R. W. McNealy,\* serves to identify a loop of bowel that has been examined and therefore need not be handled again.

It is interesting to me that blood is preferred to plasma in these cases because I, too, prefer blood in my work.

I am certain that after this war is over our management of rectal and colonic injuries will be considerably revised because of the experience and observations of medical officers like Captain Hamilton.

\* *S. Clin. North America* 24: 79 (1944).

### VOCATIONAL TRAINING REHABILITATES DISABLED

More than 75,000 men and women who were unable to hold a job because of some crippling disability have gone on the 1944 payrolls as a result of assistance given them under the Federal-State program for vocational training, Federal Security Administrator Paul V. McNutt announced on October 29. This total, much larger than that for any previous year, comes, he said, from a tabulation of reports made by the State boards of vocational education to the Office of Vocational Rehabilitation of the Federal Security Agency.

Emphasizing the economic importance of the rehabilitation program, Mr. McNutt cited the results obtained by the District of Columbia Rehabilitation Service during the fiscal year 1943-1944. A summary of its report accounts for the rehabilitation of 435 handicapped persons. Of this number

161 were placed in government jobs and 274 in jobs in industries essential to the civilian economy.

The annual earnings of the 435 persons rehabilitated, it was pointed out, will amount to \$714,636 the first year after their rehabilitation. The average weekly wage was raised from \$28.65 in the fiscal year 1942-1943 to \$31.59 in 1944.

Of all the rehabilitated cases, 76, or 17.5 per cent, were referred by the District of Columbia Board of Public Welfare. The annual earnings of this group alone will amount to at least \$103,320. If these persons had not been restored to remunerative employment, Mr. McNutt said, it would have cost the Board of Public Welfare \$25,016 as an annual recurring expense, while the cost of rehabilitation amounted to only \$3,592.—*Release from the Office of War Information, Oct. 29, 1944*

# Diagnosis

## CLINICOPATHOLOGIC CONFERENCES

### FOURTH MEDICAL DIVISION OF BELLEVUE HOSPITAL

Date October 26, 1944

Conducted by Dr. Harry A. Solomon

DR. MARILYN T. SCHIFFMAN: J. V., a 17-year-old white girl, was admitted to Bellevue Hospital on July 14, 1943, with chief complaints of pain in the left side of the chest of one day's duration, and increasing dyspnea and orthopnea, joint pains, and intermittent feverishness of three months' duration.

The patient had known since childhood that she had heart trouble, and was told that she had been born with it. She was followed in the Cardiac Out-Patient Department for congenital cardiac disease, and by her local medical doctor, and was quite well on only moderate limitation of activity. On about April 4, 1943, she had a sudden onset of pain in the left chest and axilla, feverishness, and pain in both ankles, which gradually extended to the knees. This was not associated with swelling or redness. The chest pain was sharp, nonradiating, and aggravated by coughing and respiration, but was not associated with bloody sputum. These symptoms subsided spontaneously, only to recur with increasing frequency up to the time of the present illness. At the same time dyspnea (which rapidly progressed to the rest type), orthopnea, weakness, fatigue, and anorexia developed. There was no nausea, vomiting, constipation, or diarrhea. There was no previous history of joint pains, epistaxis, cyanosis, palpitation, or edema. There had been occasional colds and sore throats, but none in recent months, and there was no knowledge of previous rheumatic fever. The patient claimed a 20-pound weight loss in two months and weighed 76 pounds on admission.

She had been admitted to another hospital in February, 1942, and was treated for fifteen days for spleen and liver trouble, and then was discharged as improved. The past history and family history were otherwise noncontributory.

**Examination on Admission.**—Examination revealed a pale, emaciated, dyspneic, orthopneic white female who appeared chronically ill but was not in acute distress.

The temperature was 102.4 F, pulse, 120, respirations, 28, and blood pressure, 118/60—0

Head and ear, nose, and throat. Negative.

The cervical nodes were palpable. Moderate pulsations and systolic thrill were noted in the supraclavicular fossa. Moderate carotid pulsations were present. The trachea was in the midline. There was a marked hyphoscoliosis.

The left lung showed absent fremitus in the lower half (anterior and posterior) with increased resonance in the upper one-half, where bronchovesicular breath sounds with a peculiar amphoric quality were heard. There were a few moist rales below the angle of the scapula. The bronchovesicular breath sounds and a few moist rales were heard in the upper two-thirds of the right chest (anterior and posterior).

The point of maximum intensity was in the fifth intercostal space just outside the inferior axillary line, with visible pulsations. The first sound was almost inaudible at the apex. There was a suggestive systolic thrill at the apex and a loud systolic thrill at the base. The aortic second sound and the pulmonary second sound were equal. A harsh, loud, low-pitched systolic murmur was heard best at the third left intercostal space, but was transmitted over the entire chest. The rate was rapid and regular with an occasional dropped beat.

The liver was felt two fingerbreadths below the costal margin. The spleen was at the level of the umbilicus. There was moderate left costovertebral angle tenderness.

The extremities showed moderate cyanosis and clubbing of fingers.

**Laboratory Data on Admission.**—The red blood count was 4.3 million, hemoglobin 12.5 Gm. The white blood count was 17,750 with 82 per cent polymorphonuclears and toxic granules. The urinalysis was negative, except for a few hyaline and granular casts. The erythrocyte sedimentation rate was 9 mm. per hour.

**Course.**—The patient ran an irregularly febrile course with rises to 101 F and occasionally as high as 102 F. An x-ray on July 26 revealed a massive effusion of the right lung field, marked enlargement of the heart in the transverse diameter, and displacement to the left. On July 30, resolution of the effusion revealed a pneumonic process of the right lower lobe with thickening of the interlobar and axillary pleura.



The right lower lobe consolidation persisted to the end of the course and on November 9 involvement of the lower one-third of the left lung was noted.

There was a progressive slow decrease in the white blood count and differential counts with occasional moderate elevations to the termination of the course. The erythrocyte sedimentation rate rose to 65 on July 28, but fell to 12 on August 4, and never rose above that. The electrocardiograms were entirely normal.

Subsequent urine analyses showed red blood cells, white blood cells, casts, and increasing albumin to 4 plus.

Concentrating power remained good until December, when it became fixed below 1.008. Blood cultures were done weekly and remained negative, except for those of August 13 and 23 and September 3, which were positive for streptococcus of an undetermined type. Terminally, the urea nitrogen rose to 45 mg. per cent and creatinine to 1.8 mg. per cent. The blood pressure remained normal.

The patient's condition remained essentially the same for a while. On August 23, a course of sulfadiazine therapy was begun and 7 Gm. were given by mouth in two days. On August 25 triple typhoid-vaccine fever therapy was begun, and 3 Gm. of sodium sulfadiazine was given intravenously at the height of the fever. This was repeated on August 27 and then every two to seven days for ten treatments with some improvement—that is, reduction in the size of the spleen and increase in general well-being. On September 24, she developed left upper quadrant pain and a splenic infarct was suspected. Repeated pulmonary infarctions occurred.

It was decided that the murmur heard in systole was caused by a patent ductus arteriosus and the patient was transferred to the Chest Service for ligation of the duct on November 22, but her condition became worse so rapidly that ligation was postponed. On December 1, following digitalization for congestive failure, showers of petechiae were noted. The patient's course was rapidly downhill; petechial manifestations continued, and on December 12 the patient died.

## Discussion

DR. HARRY A. SOLOMON: This interesting girl was on the medical ward for a long time and provoked a good deal of controversial discussion, particularly with regard to her cardiac lesions.

She was sheltered from infancy onward as a cardiac invalid, and classified as having a congenital anomaly at the Cardiac Clinic, which she attended for most of her young life. Of course her stunted body growth, impaired nutritional state, and a congenital anomaly of the spine

lent further support to the diagnosis of congenital heart disease.

No indication of rheumatic fever was obtainable. In fact, she carried on quite well and the only history of previous illness was that fifteen months prior to admission to Bellevue, she was treated at another hospital for an attack of severe abdominal pain and discharged after fifteen days with a diagnosis of liver and spleen disease.

On admission her appearance of chronic wasting disease with marked respiratory distress because of air-hunger and chest pain dramatically confirmed the history of months of suffering with fever, cough and expectoration, orthopnea, anorexia, sweating, exhaustion, etc. Subacute bacterial endocarditis was suggested by the chronic septic state with cardiac murmurs, and pulmonary embolizations and infarctions by the episodic sharp chest pains associated with cough, dyspnea, and hemoptysis. After a while positive blood cultures with a streptococcus organism confirmed the first condition while characteristic x-ray findings in the chest substantiated the second. Regarding the cardiac signs, there was a prolonged systolic rough murmur and thrill over the third intercostal space to the left of the sternum. This murmur seemed to be transmitted over the entire base of the heart, but was not heard posteriorly. The pulmonic second sound which was audible at first subsequently disappeared. Also over the mitral area there was a short presystolic murmur and thrill of mild intensity. No aortic or tricuspid murmurs could be made out, although it is only fair to state that evaluation of physical signs in the chest was difficult not only because of the rapid heart rate, but also because of the deformity of the chest which displaced the heart, the extensive rales which filled the chest, and the patient's inability to cooperate because of extreme pain and dyspnea.

Bacterial endocarditis of the valves of the pulmonary artery due to a streptococcus organism could adequately explain the clinical picture with the signs of pulmonary stenosis, pulmonary infarction, septic state, and paucity of positive blood cultures. A pre-existing defect of this valve of congenital origin could be assumed from the history.

When it became apparent that sulfonamide and supportive therapy was not controlling the infection, treatment with combined induced hyperpyrexia and sulfonamides was tried, but with only transient benefit.

Naturally, with bacterial endocarditis and a congenital heart lesion, it was devoutly hoped that patent ductus arteriosus could be proved and the patient could have the opportunity of surgical ligation as a life-saving measure. But, unfortunately, adequate criteria for this anomaly

were lacking. Granting that a diastolic murmur is not always present in this condition, the systolic murmur was not heard over the posterior chest and the x-ray showed no significant enlargement of the pulmonary artery or its main branches. One might comment on the enormous size of the spleen, which extended well below the umbilicus and seemed larger than could be accounted for on the basis of chronic sepsis and cardiac cirrhosis. The possibility of thrombosis of the splenic vein was thought of because of the history of an episode of severe abdominal pain with "liver and spleen" disease diagnosed during a previous hospitalization. There were, however, no signs of splenic dysfunction.

Of interest also were the changes of progressive renal damage and renal insufficiency which developed as the bacterial endocarditis infection continued with the focus limited to the right heart and the lungs serving as organs of immunity and barriers to the systemic spread of the infection.

The progressive and extensive involvement of the kidneys with focal embolic glomerular nephritis explains the urine findings with persistent red cells, impaired concentrating ability, and rapid accumulation of very high sulfonamide blood levels, as well as renal failure. Without gross hematuria or hemoglobinuria one would not expect renal infarction.

With the patient's condition getting steadily worse, she was transferred to the Chest Service for further study for possible patent ductus arteriosus with more hope than expectation of finding this condition or altering the prognosis.

So, finally, on the basis of our interpretation of the developing clinical picture presented by this patient, the following pathologic findings can be expected:

Subacute bacterial endocarditis due to a streptococcus organism.

The bacterial nidus developed in the valves of the pulmonary artery, which was defective on a congenital basis. The predominant embolic phenomena were in the lungs with extensive infarction, and in the kidneys with widespread focal glomerular nephritis.

The congenital anomaly of patent ductus arteriosus could not be established.

Rheumatic heart disease with mitral stenosis was suspected.

Thrombosis of the splenic vein was considered.

Dr. NAMMACK: The superimposing of subacute bacterial endocarditis on a congenital cardiac defect is common. In my experience, we always have trouble in identifying the lesions and without an electrocardiogram, we would have difficulty. The splenomegaly was probably the result of a previous splenic infarct and the spleen

remained large. The streptococcus may have been nonpathogenic and appeared and disappeared.

Dr. KELLY: There are several things that occur to me. First—how long were her fingers clubbed? All her life?

Dr. SOLOMON: They were only slightly clubbed and I think that this might be explained on the basis of the chest deformity.

Dr. KELLY: I doubt the presence of a patent ductus arteriosus. There was no machinery murmur, no electrocardiogram changes consistent with the diagnosis—the murmur that was heard was not transmitted to the back. I think that there must have been a malformation of the pulmonary valve with endocarditis engrafted on it.

Dr. TRUBCK: One thing we could be sure about was pulmonary embolization. She had hemoptysis and consolidation. About the question of a patent ductus arteriosus—there was a systolic thrill and murmur. The second pulmonic sound was good. The x-ray did not show prominence of the pulmonary artery and the electrocardiogram did not show right axis deviation.

The murmur was not characteristic of patent ductus arteriosus. Because of the negative confirmatory findings, I felt that this was pulmonary stenosis and not patent ductus arteriosus. Chronic sepsis probably produced the splenomegaly and has nothing to do with infarction in this right-sided endocarditis.

Dr. SOLOMON: Is it required to have the typical murmur to diagnose patent ductus arteriosus?

Dr. NICHOLSON: I remember two cases in point. In one the murmur, which had been typical, disappeared years before death, but the patent ductus arteriosus was found at necropsy. In the other, recordings of the murmurs established the diagnosis.

Dr. JOHANNSEN: Dr. Solomon, how do you tie up the loss of renal function with subacute bacterial endocarditis, especially since there was no evidence for acute diffuse glomerulonephritis?

Dr. SOLOMON: You admit the evidence for renal damage. It is reasonable to assume that this patient had very extensive focal embolic glomerulonephritis. In the presence of subacute bacterial endocarditis, there can be sufficient damage to the glomeruli to dangerously impair renal function.

Dr. WASHBURN: Why is that important in this case?

Dr. SOLOMON: Because we gave sulfadiazine and with doses of 1-2 Gm. got blood levels as high as 16 mg. per cent.

Dr. JOHANNSEN: Did you fluoroscope the patient to observe a hilar dance?

Dr. SOLOMON: No, she was always too sick

for that. Dr. Koffler, can you make the diagnosis of patent ductus arteriosus with only a systolic murmur?

DR. KOFFLER: Yes, it is not necessary to have a diastolic murmur.

DR. NICHOLSON: What did the electrocardiogram show?

DR. SOLOMON: It was normal. There was no right axis deviation.

## Presentation of Pathology

### Anatomic Diagnosis

Rheumatic heart disease with involvement of pulmonary, tricuspid, and mitral valves

Subacute bacterial endocarditis of the pulmonary valve, with partial occlusion of pulmonary orifice

Hypertrophy of heart, right ventricle and auricle

Chronic focal myocarditis

Pulmonary emboli, multiple

Infarcts of lungs, with liquefaction necrosis of two infarcts

Splenic tumor

Focal embolic glomerulonephritis

Acute ulcers of duodenum

Scoliosis of dorsal vertebra with asymmetry of chest

DR. HENRY SPITZ: This case presented several interesting features at autopsy. Although there was widespread rheumatic heart disease, the

aortic valves were spared but the pulmonic cusps were widely involved. The polypoid vegetations engrafted upon the pulmonary cusps apparently caused considerable stenosis of the pulmonary ostium. The valves were widely destroyed by the inflammatory process and the vegetations contained large colonies of bacteria and were partly covered by endothelium. The ductus arteriosus (Botallo's) was completely obliterated. Infarcts present in the lungs were old and recent and two of them were partly liquefied. Arteries and veins in the infarcted areas showed severe inflammatory changes of their walls with thrombosis. The spleen was more than four times its normal size and presented the histologic picture usually seen in chronic septic conditions. There were no infarcts and no obstruction of the splenic vein was found. The focal glomerulonephritis was rather widespread, but few of the glomeruli were completely destroyed. There was considerable hemorrhage into Bowman's capsules and the convoluted tubules. There were ulcers in the initial portion of the duodenum which were quite recent, showed no scarring, and developed possibly on an embolic basis. Other anatomic findings pointing to heart failure and chronic embarrassment of the pulmonary circulation were clubbed fingers and effusions in the left pleural and peritoneal cavities. The right pleural space was entirely obliterated by fibrous adhesions.

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1945

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PETER IRVING, M.D., *Secretary*

# Case Report

## URINARY SUPPRESSION FOLLOWING THE USE OF SULFADIAZINE

MURRAY F. BELL, MAJ., (MC), MILTON CANTOR, CAPT., (MC), AND PHILIP GREINLEY, CAPT., (MC), AUS

SULFADIAZINE has been regarded as one of the most innocuous drugs of the sulfonamide group, especially with regard to the urinary tract. This is due to the fact that only about 10 per cent of the drug is conjugated in the body, and that, although the acetylated sulfadiazine is therapeutically inactive, it is even more soluble in urine than the free form.

Raines,<sup>1</sup> in reporting a case of sulfadiazine toxicity, states that renal complications following the use of sulfadiazine have been reported in 3 to 4 per cent of a series of about 1,500 grouped cases treated, and in only one instance did urinary suppression occur.

The following case of hematuria, oliguria, and bilateral ureteral obstruction after sulfadiazine therapy was observed. It is reported to bring further attention to renal complications from the use of this drug, and to emphasize the rapidity with which the above-mentioned complications may occur.

### Report of Case

L K, a white soldier, aged 35, was admitted to the 210th General Hospital on November 2, 1942, complaining of cough, malaise, and weakness of five days' duration. The past history was irrelevant. The temperature on admission was 102.2 F., pulse rate 96, and respiratory rate 20 per minute. Subcrepitant rales were audible over the right mid-lung anteriorly, and roentgenograms of the chest revealed consolidation of the right middle lobe. The heart was normal, rhythm regular, and the blood pressure 120 systolic and 85 diastolic. On admission, the red cell count was 4,150,000, hemoglobin was 80 per cent, and the white blood count was 8,000, with 63 per cent polymorphonuclear.

The ur

for ova parasites were negative. Sputum typing revealed a few pneumococci which were not type-specific with the Neufeld Quellung reaction. A diagnosis of lobar pneumonia, right middle lobe, was made.

In view of the patient's good general condition, and the fact that the so-called primary atypical pneumonias seen in this region do not respond to the sulfonamide drugs, chemotherapy was withheld. However, when the fever persisted and the patient appeared more toxic, sulfadiazine was begun on November 5 with an initial dose of 3 Gm., followed by 2 Gm. four hours later, and 1 Gm. every four hours thereafter. The following day the tem-

November 6-7, he had eight to ten watery bowel movements. He then suddenly became restless and began to com-

plain of difficulty in urination. This manifested itself not in actual pain, but in a sense of an inability to void with satisfaction. He could only pass about 10 cc. of a reddish urine. In addition, he was seized with an "aching" in the lower quadrants of the abdomen. Soon thereafter, forty-six hours after institution of sulfadiazine therapy, he voided 30 cc. of a frankly bile he had received a total. This was immediately later another 5 cc. of passed. Microscopic red blood cells and 5 to free and acetylated, per high-power field. At this time the blood nonprotein nitrogen was 41 mg per cent and the creatinine 1.9 mg per cent. The blood pressure was 130 systolic and 100 diastolic.

Fluids were forced both orally and intravenously. At 11:30 A.M. he voided 300 cc. of a pinkish urine, much clearer than the previous specimens. In view of this apparently favorable course, it was decided to defer cystoscopy and continue a conservative regimen. The diarrhea was effectively controlled by the oral administration of bismuth and tincture of opium.

Microscopically, the urine contained 6 to 10 red cells, and 3 to 4 free and acetylated sulfadiazine crystals per high-power field. The blood pressure on November 8 was 125 systolic and 90 diastolic. During the second twenty-four-hour period, November 8-9, the total fluid intake was 3,620 cc., the urinary output 1,655 cc., and the vomited material 120 cc. The urine showed 3 plus albumin, 10-15 red blood cells, and many free and acetylated sulfa-

to 102.4 F. increased dullness, with numerous subcrepitant and coarse rales over the right mid-lung field and scattered rhonchi throughout both lungs. From 7:00 A.M. to 4:00 P.M. of November 9 he had voided only 200 cc. of urine. His blood pressure rose to 175 systolic and 105 diastolic. The blood nonprotein nitrogen was 46 mg. per cent. The temperature fluctuated between 99 F. and 100 F. He vomited small amounts and complained of sharp pains in the right flank and right lower quadrant of the abdomen. The urine had a pinkish coloration. A cystoscopic examination was therefore decided upon.

**First Cystoscopy**—Under novocaine instillation a Brown-Buerger 24F cystoscope was easily introduced into the bladder. The urine was cloudy and bloody, and contained many yellow particles. The mucosa appeared fairly normal. The right ureteral orifice was easily seen. It was surrounded by a slight amount of edema. The ureter was normally active. The left ureteral orifice was completely obscured by bullous edema, and numerous

\* From the Medical and Urological Services, 210 General Hospital, New Orleans

small hemorrhages. Very occasionally, small spurts of blood emanated from within this area.

A 6F catheter was inserted into the right ureter for 27 cm. A soft obstruction was met and easily overcome at 6 cm. Many small particles, similar to those seen in the bladder, escaped from the ureter around the catheter as it was introduced. The urine flow was rapid and in a continuous stream. The urine was hazy and contained numerous free and acetylated forms of sulfadiazine crystals. The kidney pelvis was lavaged with 2 per cent sodium bicarbonate. The left ureteral orifice could not be seen or catheterized.

The patient was returned to bed with the right ureteral catheter *in situ*, and orders were given to irrigate the catheter at definite frequent intervals, with a 2 per cent sodium bicarbonate solution.

The catheter drained freely. The fluid intake for the twenty-four-hour period November 10-11 was 6,136 cc. and the urinary output 1,647 cc. The urine again assumed a reddish color. The blood pressure on November 11 was 150 systolic and 100 diastolic. The temperature was 102 F., the blood nonprotein nitrogen was 48 mg. per cent, and the creatinine was 2.4 mg. per cent. A continuous slow intravenous infusion of 5 per cent glucose in normal saline, which had been started right after the cystoscopy, was continued for the following thirty-six hours. In addition, the patient received orally 1 Gm. of sodium bicarbonate every one to two hours, whenever the urine gave an acid reaction to litmus paper.

During the twenty-four-hour period November 11-12 the fluid intake was 4,950 cc. and the urinary output was 3,170 cc., of which 1,730 cc. drained from the catheter, and 1,440 cc. was voided around it. The urine became relatively clear, containing some red blood cells and a few sulfadiazine crystals. The blood pressure was 140/90. The blood nonprotein nitrogen was 38 mg. per cent and the creatinine 2.4 mg. per cent. The patient's general condition appeared to be improved, although the temperature rose to 103 F. On November 12, another cystoscopy was decided upon to determine the patency of the left ureter.

**Second Cystoscopy.**—The right ureteral catheter was noted *in situ*. The entire bladder mucosa was hyperemic and moderately edematous. The left ureteral orifice was still completely obscured by the bullous edema, and the ureter could not be catheterized.

Intravenous indigo carmine was administered. The dye appeared in good concentration from the right catheter within six minutes. No dye emanated from the left side in thirty-two minutes. The patient was returned with the right catheter still in place.

When the patient was returned to the ward after cystoscopy, his pulse was found to be totally irregular—rate 75, with an irregular apical heart beat of 155. The blood pressure was 115/70. He had, however, no subjective complaints. Auricular fibrillation was diagnosed and confirmed by electrocardiogram. There were no signs of cardiac failure. About four hours after the onset of the fibrillation, the heart suddenly resumed a regular sinus rhythm—84 per minute, with occasional extra-systoles.

The next morning, November 13, the heart was again found to be fibrillating. The blood pressure was 115 systolic and 70 diastolic. An initial test dose of 0.12 Gm. of quinidine sulfate was given orally. About forty-five minutes later, the heart resumed a normal rhythm. Quinidine sulfate, 0.3 Gm. every four hours, was then given as a prophylactic meas-

ure. The following day, a moderate, watery diarrhea developed. The patient complained of giddiness and stated that he had "hot flashes." With the possibility of a toxic effect from the drug in mind, the quinidine sulfate was discontinued. These symptoms cleared quickly and the patient had no further episodes of auricular fibrillation.

The right ureteral catheter was removed during the evening of November 14. It had remained *in situ* for five days.

Throughout the following week the patient's condition continued to improve. The pneumonic process showed signs of resolution, and the fever subsided. The urinary output was maintained satisfactorily, and, microscopically, the urine contained a few pus cells per high-power field. The blood nonprotein nitrogen remained within normal limits.

On November 22, the temperature began to rise. The higher points of the temperature curve coincided with pain in the left flank and the voiding of clear urine; the lower points with relief of pain and the appearance of pus clumps in the voided specimens. Accordingly, on November 25, another cystoscopy was performed.

**Third Cystoscopy.**—The bladder mucosa, although generally mildly hyperemic, appeared much improved. The areas around both ureteral orifices were entirely normal. A 5F catheter was inserted into the easily visible left ureteral orifice for 27 cm. A soft obstruction at 3 cm. was encountered and easily broken up. The urine flow from the left kidney was normal. This urine contained innumerable white cells. The right kidney urine was normal. Cultures of both these urines showed no growth.

Indigo carmine, 5 cc., was given intravenously and appeared on the right side, in good concentration, within five minutes, and on the left side, in equally good concentration, in eleven minutes.

Following the last cystoscopy, the patient became afebrile and remained so. The urine gradually became free of pus cells and sulfadiazine crystals. The specific gravities of casual urine specimens ranged as high as 1.028. The blood nonprotein nitrogen continued to remain within normal limits. The pneumonic process completely resolved, as indicated by physical and x-ray examinations.

On December 12, intravenous pyelography was performed. The right kidney showed good dye concentration, with a bifid pelvis and ureter which united at the level of the third lumbar vertebra. The left kidney revealed a good concentration of the dye, with a normal configuration of the renal calyces, pelvis, and left ureter.

The patient remained asymptomatic and had no complaints. He was discharged from the hospital on December 19, 1942.

## Comment

The toxic symptoms manifested by our patient were: watery diarrhea, abdominal pain, gross and microscopic hematuria, and urinary suppression.

It is a well-established policy that during the administration of a sulfonamide drug, dehydration must be avoided. Our patient did not appear dehydrated on admission. The watery diarrhea, which began about thirty-six hours after the administration of a total dose of 12 Gm. of sulfadiazine, was probably the precipitating factor. In the presence of diarrhea, it becomes imperative to control

it as quickly as possible, and to force fluids adequately

The onset of abdominal pain during the administration of a sulfonamide drug is an indication for careful examination of the urine, and measurement of the fluid intake and output. Should, in addition, diminished urinary output ensue, with or without hematuria, the drug must be discontinued immediately, fluids forced, and cystoscopy performed to determine the patency of the ureters. Any delay may result in aggravation of the pathologic changes in the urinary tract. A marked periureteral edema may occur which may completely obscure the orifice. In addition, the degree of impaction in the ureters may be increased to the extent that it cannot be overcome by catheter manipulation. From the time of the first cystoscopy on November 9 to the third one on November 25 some degree of left ureteral obstruction was present. Had the patency of the right ureter not been established and maintained, it, too, might have become completely occluded, resulting in anuria.

The right ureteral catheter was kept *in situ* for five days. It was removed after it had been ascertained by trial clamping of the catheter, that at least 1,200 cc of urine were being passed around it.

Since the conjugated much more soluble in carbonate was given and was used as an irrigant, administered routinely with a sulfonamide is still a debatable question. Schwartz, Flippin, Reinhold, and Domm<sup>2</sup> studied the urine of 100 patients, one

half of whom were taking sulfathiazole and the remainder sulfadiazine. They concluded that it may be advisable to administer an alkali with these drugs. Others, as does Thompson,<sup>3</sup> question the need for alkalinization, especially when sulfadiazine is used.

### Conclusions

1 Sulfadiazine, notwithstanding the relatively high solubility of its free and acetylated crystals, can produce serious urinary tract complications.

2 A patient receiving this drug should have daily urine examinations and measurement of the urinary output, since serious complications may develop with great rapidity.

3 Any factor producing a sudden dehydration should be combated immediately.

4 A diminishing urinary output associated with a microscopic hematuria warrants immediate withdrawal of the drug. If, in addition, abdominal or flank pain is present, with or without the presence of crystals in the urine, cystoscopy should be performed at once.

5 Any patient who has experienced such toxic renal complications should be thoroughly informed, so that he will be able to give this information, if occasion should arise in which sulfonamides may again be indicated.

### References

- 1 Raines S L JAMA 119 496 (June 6) 1942
- 2 Schwartz, L, Flippin H F, Reinhold J G and Domm A H JAMA 117 514 (Aug 18) 1941
- 3 Thompson G J Proc Staff Meeting Mayo Clin 16 609-612 (Sept 24) 1941

### PERSONALITY IN DIAGNOSIS

It has long been an axiom that man produces within himself the maladies that afflict him. For example, there is the mortal whose friends will say of him, after his departure from this vale of tears, "He dug his grave with his teeth." Now medical men are learning to pre-type of ailment persist in being ourselves.

In a new book, *Psychosomatic Diagnosis*, Dr Flinders Dunbar, of this city, explores the relationship between personality and the thousand natural shocks that flesh is heir to. Emotional people tend to suffer from indigestion. Extroverts, with their impulsive and unmethodic natures, are prone to become fracture, contusion, and abrasion cases. takes life seriously quite likely to

More and more the doctor, when Mr Brownley has to go to see him, will want to know, first of all, the sort of person Mr Brownley is. Is Mr B a confirmed misanthrope, with a mean, suspicious reactionary front toward the world? Then the chances are that he has one of the numerous grave disorders listed in the Diagnostician's Desk Manual under Chapter X, and he had better be hospitalized at once for observation.

If, however, his normal disposition is sunny and convivial, if he readily wins friends and influences people, if he sings in the bathtub, then it is a safe assumption that his trouble is listed in Chapter XIII, under Dietary Disorders, and that a couple of good doses of Tinc Slip Ellum at bedtime will fix him up.

Let it not be supposed, however, that it will be as simple as that for the physician of the future. For personalities are not always clear-cut. A man may be both a timid soul and an extremely left-wing liberal. In that case it would be hasty to say, off hand, that his disease is chicken pox. It may rather be scarlet fever. In the same way the affliction of the concealed and extremely busy blowhard may be auto-intoxication, the hives, or pneumonia.

The doctor will have to put him through supplementary tests to find out for sure.

Nevertheless we can believe that the doctor in the primary study of the It will give him's wrong. It will save much time. And from all the gloomy reports nowadays regarding the health of the American people, the doctor of the future is going to need every waking minute for the work on his hands.—Topics of the Times, New York Times, August 10, 1944

# Case Report

## TOTAL PERINEAL PROSTATECTOMY FOR ENDOGENOUS PROSTATIC CALCULI

K. K. NYGAARD, M.D., and E. W. WEBER, M.D., White Plains, New York

FOR many years considerable interest has centered on various phases of prostatic calculi. An excellent up-to-date review has recently been presented by Gutierrez.<sup>1</sup> There probably has been a tendency to underestimate the frequency of these calculi. In a nonselective group of more than 300 autopsies, Randall<sup>2</sup> found prostatic calculi to be present in slightly more than one-fourth of the cases. It is reasonable to expect that this frequency will be found to be higher in autopsy material from men dying of some type of genitourinary pathologic change. Nevertheless, it has been the general impression that, in a routine urologic practice, prostatic calculi do not occur as a frequent urologic problem for the simple reason that a great percentage of prostatic calculi remain "silent" or escape detection. Granted that the basis of the formation of endogenous prostatic calculi, the corpora amylacea, can be considered the result of physiologic processes, there is evidence to indicate that the further formation of calcium salts around these organic nuclei is precipitated by physiopathologic processes. When the formation of calculi is well under way, secondary inflammatory processes develop in the majority of cases. On this basis the endogenous prostatic calculi must be considered a potential source of more serious urologic changes, even though the majority of them during early stages may be considered "silent."

The patient may present himself without symptoms that have any relation to prostatic disease. In three cases reported by Pool and Thompson,<sup>3</sup> attacks of chills and fever constituted the main clinical phenomena. Typical crepitation, felt by palpation of the prostate, appears to be present in about half of the cases. Roentgenograms will reveal the condition in all cases, if precautions are taken to include the pubic region in the examination.

In the presence of prostatic calculi only a careful urologic investigation will furnish sufficient data on which the urologist may base an estimate of the relative role played by the calculi. In many cases the problem of the urologist parallels that of the gastro-enterologist confronted with so-called "silent" gallstones. In such cases nonsurgical treatment, repeated, if necessary, over long periods of time, may satisfactorily improve the inflammatory processes of the prostatic gland.

In other cases of endogenous prostatic calculi the problem may be more complicated and may necessitate some type of surgical intervention. According to Henline,<sup>4</sup> operation is indicated "(1) when obstructive symptoms develop; (2) when malignancy is suspected; (3) when infection sets in causing

severe local urinary disturbance; or (4) when the local infection may be the focus of infection elsewhere in the body."

There is no general agreement concerning the surgical procedure to be employed. The following pathologic findings have been emphasized in determining the type of surgical procedure to be chosen.

The formation of endogenous prostatic calculi is the result of processes taking place in the prostate gland proper. This is in contrast to prostatic adenomas, which are formed from the periurethral glands.

The coexistence of calculi and inflammation makes impossible a clean separation of gland tissue and the prostatic capsule. Coexistence of endogenous calculi and prostatic adenoma does not complicate the technical removal of the adenoma. In the latter cases, however, simple removal of the adenoma through suprapubic or perineal procedures would leave behind the inflamed prostatic tissues together with the majority of the calculi, all pushed to the periphery by the growing adenoma. It is consequently maintained by some workers<sup>4</sup> that only a radical removal of the prostate gland with its calculi and adherent capsule will guard against subsequent reinfection and complicating sequelae. For these reasons total or subtotal perineal prostatectomy has been employed. In 43 cases of total or subtotal perineal prostatectomy Lowsley<sup>5</sup> reports a mortality of 9.3 per cent. This group included operable cases of cancer of the prostate gland as well as prostatic calculi; the fatal cases occurred in the cancer group.

Other observers, representing a less radical view, have reported satisfactory results with perineal prostatolithotomy in cases of noncomplicated prostatic calculi, while simultaneous perineal removal of prostatic adenomata is advocated when the latter and calculi coexist.

From a pathologic point of view there should, a priori, be reason to expect that transurethral prostatic resection and manipulation of endogenous calculi would give the least satisfactory results. Unfavorable results certainly have been reported by some investigators. By others,<sup>3,6</sup> however, remarkable results have been obtained by this transurethral approach, even in cases where the size of the individual calculi might have been expected to prohibit this procedure.

From this brief review it appears at present that there exists no standard method of approach in the surgical treatment of prostatic calculi. This has to be individualized to include the afflicted patient and the existing changes, as well as the individual surgeon.

From the White Plains Hospital, White Plains, New York.



FIG. 1. Roentgenogram of pubic area, showing prostatic calculi.



FIG. 2. Sketch of operative findings after separation of the prostatic gland from its apical part.

### Case Report

A man, aged 63 years, for the last ten years had noted moderate frequency of urination. During the last one or two years he had had to arise at night from three to five times, at which times moderate dysuria was noted. At other times more marked dysuria would occur during short-lasting episodes, when he had the impression he was passing gravel with the urine. He had never noted the presence of blood.

On April 1, 1941, he was admitted to the Medical Service of the White Plains Hospital following an attack of pain typical of left renal colic. Physical examination revealed that the patient was in good condition, with moderate peripheral arteriosclerosis.

The blood pressure was 140/90. Manual rectal palpation revealed a rather pronounced enlargement of the prostate. The gland was very tender to direct pressure, but without fluctuating areas indicative of abscess formation. The crepitation typical of prostatic calculi was present. The general physical examination otherwise gave essentially negative results.

The urine contained 35 pus cells per hpf. A great number of residual urine amounting to 28 cc. was found. The flat plate of the abdomen revealed a large, dense, flat plate of the abdomen (Fig. 1). An excretory uro-

contrast The left kidney, however, was markedly reduced in caliber because of per-

patient, as he was excessively sensitive to pain and any type of instrumentation. Simple palpation of the prostate as well as regular catheterization of the bladder brought on episodes of faintness. His

tion when this was suggested to him. This mental attitude of a patient, all too familiar, was sufficiently pronounced in the present case to be taken into consideration when outlining the surgical procedure. In view of the desirability of a complete eradication of the inflammatory processes and the prostatic calculi, it was decided to do a preliminary cystostomy to be followed by subtotal perineal

the pre-  
(K.N.).

The bladder musculature was found to be slightly trabeculated, with moderate hyperemia in the mucosa of the trigone. A small hard stone with sharp surfaces, 3 by 5 mm. in diameter, was removed from the bladder. There was moderate swelling and hyperemia around the left ureteral meatus. A small ureteral catheter was passed up the left ureter to the kidney pelvis without meeting any obstruction, following which a left ureteral dilatation was performed. To the right of the right ureteral meatus was found a small papillomatous growth, covering with its base an area of about 0.5 cm. It was removed down to its base, which was left for subsequent fulguration. The bladder was finally closed around a Pezzet's catheter. Microscopic examination of the removed growth verified the diagnosis of papilloma of the bladder.

During the first few postoperative days the chief difficulty was the patient's mental attitude, which had changed from one of resigned indifference before the operation to one of pronounced apprehension



and restlessness after the operation. After five days, however, he became calmer. The further course was uneventful except for an infection of the upper respiratory tract contracted at the beginning of the second postoperative week which necessitated postponement of the second stage of the procedure.

The latter was performed (K. K. N.) on May 5, 1941, with the patient under spinal anesthesia supplemented by general anesthesia. A perineal approach was employed, essentially following the technic described by Young.<sup>7</sup> Because of marked periprostatis, particularly in the region of the seminal vesicles, the freeing of the prostate on its lateral and posterior aspects was difficult. Following the technic of Henline, the surgeon incised the prostate transversely about 1 cm. proximal to the apex of the gland, cutting through prostatic tissue and the prostatic urethra onto the metal catheter previously introduced through the penile urethra. It was then noted that one large, many-faceted stone, about 0.5 cm. in diameter, and numerous small ones were lodged in the tissues of the apex, giving it a honeycombed appearance and making it unsuitable for anastomosis with the vesical neck. (Fig. 2) After the introduction of Young's prostatic tractor into the prostatic urethra the anterior aspect of the prostate was freed, the bladder opened and cut from the prostate at the vesical neck, and the prostate removed after clamping and ligating the seminal vesicles and the ampullae. The remaining apical part of the prostate was then carefully dissected out, with its enclosed part of the urethra removed down to the beginning of the membranous urethra. A 22 F. rubber catheter was inserted through the urethra. Around this catheter the anastomosis of the vesical neck and the membranous urethra was accomplished without undue tension, using five separate sutures of Number 2 chromic catgut.

In anticipation of reactions from the patient's labile vasomotor system, 500 cc. of blood had been withdrawn before the operation and he was given a transfusion with it during the operation. Another transfusion was given the following day. During the first two days the pulse rate remained at about 120, the temperature 101 to 102 F., with subsequent fall in temperature and pulse. It was interesting to note that, according to the patient, his reaction to the first operation was more serious than to the second one. From the eighth postoperative day the temperature was normal. There was moderate perineal drainage for one week. The urethral catheter was removed after thirteen days,

when the patient was allowed out of bed. From the fifteenth day the suprapubic catheter was clamped, after which time he had normal control of urination except for slight incontinence when arising from a chair. Three weeks after operation the Pezzer's catheter was removed, a cystoscope was introduced into the bladder suprapubically, and fulguration of the base of the bladder papilloma was performed. After another two days the patient left the hospital in good general condition.

A cystoscopic examination under spinal anesthesia on August 22, 1941, revealed no constriction of the urethra or bladder neck. A slight hyperemia of the bladder trigone was noted. Below the right ureteral meatus a recurrent papilloma about 2 mm. in diameter was observed, which was fulgurated.

The patient is now in excellent general condition, and is working full-time as a plumber. He is free of any urinary disturbances. To the patient, the most satisfactory result of the operation has been the disappearance of his previously constant back-ache.

### Comment

No doubt the subtotal prostatectomy, according to the technic of Henline, represents a surgical procedure which accomplishes everything expected of a radical procedure when such is considered indicated, and still satisfactorily avoids the danger of an irreparable lesion of the external sphincter so frequently associated with total perineal prostatectomy. The present case, however, demonstrates that such a subtotal prostatectomy, in the presence of diffuse formation of calculi also in the prostatic apex, necessarily has to be converted into the more complicated procedure of total prostatectomy. This point seems of some significance in considering the surgical approach to be adopted in the individual case.

### References

1. Gutierrez, R.: *Ann. Surg.* 113: 579 (April) 1941.
2. Randall, quoted by Gutierrez.<sup>1</sup>
3. Pool, T. L., and Thompson, G. J.: *Proc. Staff Meet., Mayo Clin.* 15: 77 (1940).
4. Henline, R. D.: *J. Urol.* 44: 146 (Aug.) 1940.
5. Lowsley, O. S.: *J. Urol.* 43: 275 (Feb.) 1940.
6. Emmet, J. L.: *Proc. Staff Meet., Mayo Clin.* 16: 289 (May) 1941.
7. Young, H. H.: In H. Cabot: *Modern Urology*, Philadelphia, Lea & Febiger, 3rd Ed., 1936, p. 923.

### ARMY OPENS MALARIA TREATMENT CENTER

The Moore General Hospital, Swannanoa, North Carolina, has been designated a medical center for the study and treatment of tropical diseases, under the command of Lt. Col. Joseph M. Hayman of Cleveland. It was opened on September 1. There are 350 beds in this center for patients who are receiving active treatment, and in addition there are barracks facilities for 1,100 men for the reconditioning program. On release from bed treatment the patients will be transferred to the reconditioning barracks and continue any further treatment

required in addition to the training needed to prepare for active duty again. As far as possible all tropical disease patients in the Army will be concentrated at the new center. Particular attention will be paid to malaria and filariasis. Facilities for expansion of bed capacities as required are being provided. The new center will be under the supervision of Lt. Col. Francis R. Dieuaide, chief of the Tropical Disease Branch of the Medicine Division of the Surgeon General's Office, headed by Brig. Gen. Hugh J. Morgan.—*J.A.M.A.*, Sept. 2, 1944

# Case Report

## SELECTIVE LOCALIZATION OF INSULIN ATROPHY

ANNA R. SPIEGELMAN, M.D., New York City

THE first observations on insulin atrophy were reported by Depisch<sup>1</sup> in 1926. At about the same time Barborka<sup>2</sup> described two cases which occurred at sites continuously used for the injection of insulin. Insulin atrophy has since been reported so frequently that it is accepted as a common complication of insulin therapy. In all of the reports patients exhibiting this form of sensitivity have developed areas of atrophy regardless of the site of the injection. To our knowledge, there has been no report of atrophy occurring at one site but not at another. We thought it of value, therefore, to report such a case of selective localization of insulin atrophy.

### Case Report

Mrs. M. F., 50 years of age, was discovered to be a diabetic by her physician. She had been using for the injections into the thighs. Areas were chosen three to four inches above the parts of the arms already affected. Two injections of protamine zinc insulin were given into the left arm and one into the right arm. All three injections resulted in areas of atrophy.

### Discussion

Marble and Smith<sup>3</sup> have shown that histologic examination of tissue excised from atrophic areas indicates that insulin atrophy is due to the disappearance of fat, seemingly a process of lipolysis, with practically no evidence of inflammatory reaction. The fat which disappears is neutral fat. We may assume, in this patient, that the subcutaneous fat on the arms differs chemically from that on the thighs. This case demonstrates that it might be of

benefit to patients who are subject to insulin atrophy to change the site at which insulin is injected.

### References

1. Depisch, F.: *Klin. Wchnschr.* 5: (Oct. 15) 1926.
2. Barborka, C. J.: *J.A.M.A.* 87: 1046 (Nov. 13) 1926.
3. Marble, A., and Smith, R. M.: *Proc. Am. Diabetes A.* 1942.

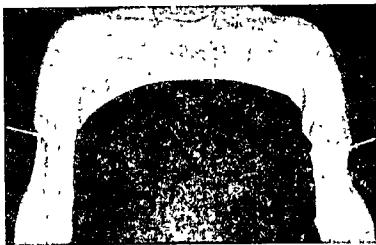


FIG. 1. Areas of insulin atrophy appear on lower half of arms. Arrows indicate specific areas produced experimentally.

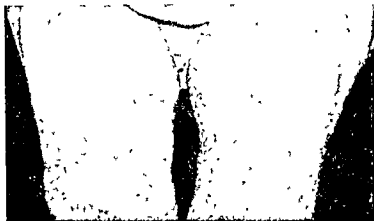


FIG. 2. Thighs are free of any evidence of atrophy in spite of continued administration of insulin.

From the Metabolic Clinic, Department of Medicine, New York Post-Graduate Medical School and Hospital.

## THE PROBLEM OF TUBERCULOSIS IN STATE HOSPITALS

Tuberculosis in state hospitals is a larger problem than has been generally recognized. It is to be expected that 4 per cent of the patients will have active pulmonary tuberculosis. Unless these pa-

tients are found, they constitute a source of contagion to the entire population.—Joseph R. Blalock, M.D., and James B. Funkhouser, M.D., in *Annals of Internal Medicine*, Aug. 1943

# Workmen's Compensation Law

(With Amendments and Annotations to May, 1944)

WE herewith publish Section 13 of the Workmen's Compensation Law as recently amended together with:

(1) Rules of the Medical Appeals Unit of the Industrial Council regulating procedure before the Medical Practice Committee, the Workmen's Compensation Boards, and Committees of the County Medical Societies.

(2) Rules of the Industrial Council governing Appeals and reviews before the Medical Appeals Unit of the Industrial Council.

(3) Rules of Procedure on Arbitration of Medical Bills under Section 13-a(3) and 13-g of the Workmen's Compensation Law.

(4) Article 4-A concerning Silicosis and other Dust Diseases.

(5) Section 1264 of the *Education Law* governing revocation of certificates; annulment of registration for rebating, and splitting of fees, etc.

(6) Section 40 of the *Insurance Law* concerning failure of an insurance carrier to comply with the provisions of the *Workmen's Compensation Law*.

(7) General rules and regulations adopted by the Industrial Commissioner governing Workmen's Compensation Practice.

HARRY ARANOW, M.D., *Chairman*

JOSEPH P. HENRY, M.D.

DAN MELLEN, M.D.

*Council Committee on Workmen's Compensation*

DAVID J. KALISKI, M.D.

*Director of the Bureau of Workmen's Compensation, Medical Society of the State of New York*

## §13. Treatment and care of injured employees.

(a) The employer shall promptly provide for an injured employee such medical, surgical, or other attendance or treatment, nurse and hospital service, medicine, crutches, and apparatus <sup>2</sup>for such period as the nature of the injury <sup>3</sup>or the process of recovery may require<sup>4</sup>. The employer shall be liable for the payment of the expenses of medical, surgical or other attendance or treatment, nurse and hospital service, medicine, crutches, and apparatus, <sup>5</sup>as well as artificial members of the body or other devices or appliances necessary in the first instance to replace, support, or relieve a portion or part of the body resulting from and necessitated by the injury of an employee, for such period as the nature of the injury or the process of recovery may require, <sup>6</sup>and the employer shall <sup>7</sup>also be liable for replacements or repairs of such artificial members of the body or such other devices or appliances <sup>8</sup>necessitated by ordinary wear. Such a replacement or repair of artificial members of the body or such other devices or appliances shall not constitute the payment of compensation under §25-a of this chapter. All fees and other charges for such treatment and services shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living.

The commissioner shall prepare and establish a schedule for the state, or schedules limited to defined localities, of minimum charges and fees for such medical treatment and care, to be determined in accordance with and to be subject to change pursuant to rules promulgated by the commissioner. Before preparing such schedule for the state or schedules for limited localities the commissioner shall request the president of the Medical Society of the State of New York to submit to him a report on the amount of remuneration deemed by such society to be fair and adequate for the types of care to be

rendered under this chapter, but consideration shall be given to the view of other interested parties. The amounts payable by the employer for such treatment and services shall in no case be less than the fees and charges established by such schedule. Nothing in this schedule, however, shall prevent voluntary payment of amounts higher than the fees and charges fixed therein, but no physician rendering medical treatment or care may receive payment in any higher amount unless such increased amount has been authorized by the employer, or by decision as provided in section thirteen-g herein. <sup>9</sup>Nothing in this section shall be construed as preventing the employment of a duly authorized physician on a salary basis by an authorized compensation medical bureau or laboratory. [This subdivision (a) amended by L. 1922, ch. 615; L. 1935, chs. 258 and 930; L. 1939, ch. 540; L. 1944, ch. 463.]

<sup>1</sup> Subdivision letter "(a)" inserted by L. 1935, ch. 258.

<sup>2</sup> Words "for such period" inserted by L. 1922, ch. 615.

<sup>3</sup> Words "or the process of recovery" inserted by L. 1922, ch. 615.

<sup>4</sup> Words, "during sixty days after the injury; but the commission may where the nature of the injury or the process of recovery requires a longer period of treatment require the same from the employer" as amended by L. 1918, ch. 634, stricken out by L. 1922, ch. 615.

<sup>5</sup> Words "The employer shall . . . §13-g herein" inserted by L. 1935, ch. 258.

<sup>6</sup> Words "as well as . . . resulting from and" inserted by L. 1939, ch. 540.

<sup>7</sup> Words "but the employer. . . or appliances" inserted by L. 1939, ch. 540; word "and" substituted for word "but" by L. 1944, ch. 463.

<sup>8</sup> Sentence "Nothing in . . . or laboratory" added by L. 1935, ch. 930.

<sup>9</sup> Word "also" substituted for word "not" by L. 1944, ch. 463.

<sup>10</sup> Words "necessitated by . . . of this chapter" inserted by L. 1944, ch. 463.

*Fee schedules.* The Commissioner may not prescribe a

minimum fee schedule for hospitals. Opinion of Attorney-General, December 14, 1936.

Pursuant to this subdivision (a), a "Minimum Medical Fee Schedule" which applies to the entire State has been promulgated by the Industrial Commissioner. It is not reproduced here but copies may be obtained from the Department of Labor at nominal cost. Rules and regulations promulgated under §§13-13 j.

(b) In the case of persons injured outside of this State, but entitled under this chapter, the authorized physicians

so at the expense of the employer. The employee shall not be entitled to recover any amount expended by him for such treatment or services unless he shall have requested the employer to furnish the same and the employer shall have refused or neglected to do so, or unless the nature of the injury required such treatment and services and the employer or his superintendent or foreman having knowledge of such injury shall have neglected to provide the same; nor shall any claim for medical or surgical treatment be valid and enforceable, as against such employer, unless within twenty days following the first treatment, the physician giving such treatment, furnish to the employer and the industrial commissioner a report of such injury and treatment, on a form prescribed by the industrial commissioner. The board may, however, by the unanimous vote of all the qualified members, excuse the failure to give such notice within twenty days when it finds it to be in the interest of justice to do so, and may, subject to the limitations contained in §28 of this chapter, make an award for the reasonable value of such medical or surgical treatment. All fees and other charges for such treatment and

of a like standard of living [This subdivision (b) amended by L. 1922, ch 615, L 1927, ch 533; and L. 1935, ch. 253]

by L. 1922, ch. 615

"Sentence" "The board . . . surgical treatment" inserted by L. 1927, ch. 553

"Word "finds" substituted for word "and" by L. 1935, ch. 258.

"Words "whether furnished by the employer or otherwise" inserted by L. 1927, ch 553

"Word "board" substituted for word "commissioner" by L. 1927, ch 553.

Fees—treatment outside State For bills of New Jersey physicians giving medical treatment to residents of New Jersey injured in New York State, see Opinion of Attorney General, July 8, 1936

Medical reports—filing Employers or carriers must promptly file with the commissioner all physician, hospital, or other medical reports coming into their possession. Board's Rules and Procedure, Rules 1 and 2 appended below.

For the report required by this subdivision (b), the Division of Workmen's Compensation of the Department of Labor supplies form C-4

(c) The liability of an employer for medical treatment as herein provided shall not be affected by the fact that his employee was injured through

the fault or negligence of a third party, not in the same employ.<sup>1</sup> The employer shall, however, have an additional cause of action against such third party to recover any amounts paid by him for such medical treatment, in like manner as provided in §29 of this chapter [This subdivision (c) added by L. 1927, ch 553, lettered (c) by L. 1935, ch 258, and amended by L. 1941, ch. 474.]

<sup>1</sup> Subdivision letter "(c)" supplied by L. 1935, ch 258, text supplied by L. 1927, ch 553

<sup>2</sup> Words "unless and until notice of election to sue or the bringing of suit against such third party" eliminated by L. 1944, ch 474

(d) The industrial board, on its own motion, or a referee, upon the recommendation of the chief medical examiner for the workmen's compensation division, hearing a claim for compensation may require examination of any claimant by a physician especially qualified with respect to the diagnosis or treatment of the disability for which compensation is claimed; and may require a report from such physician on the diagnosis, the causal relationship between the alleged injury and subsequent disability, proper treatment, and the extent of the disability of such claimant. The employer or his insurance carrier shall pay for such examination in an amount to be directed by the industrial commissioner.

The industrial commissioner may employ, within the limits of the appropriation therefor, physicians of outstanding qualifications as committees of expert consultants in such fields of medicine as he deems essential in order to ascertain the diagnosis, the causal relationship between the al-

employed by or accept or participate in any fee from any insurance company authorized to write workmen's compensation insurance in this state, or from

of expert consultants shall constitute the findings and opinions of the committee. The contents of such report of the committee of expert consultants when introduced in evidence shall constitute prima facie evidence of fact as to the matter contained therein, and any of the makers of such report shall be subject to examination upon demand. [Added by L. 1935, ch. 258; amended by L. 1941, ch. 465.]

<sup>1</sup> This subdivision "(d)" added by L. 1935, ch 258

<sup>2</sup> Provision that the physician to conduct such examination shall be designated by the commissioner from a panel submitted to him by the county medical society was stricken out by L. 1944, ch 465.

<sup>3</sup> Rest of subdivision added by L. 1944, ch 465.

§13-a. Selection of authorized physician by employee. (1) An injured employee may, when care is required, select to treat him any physician authorized by the commissioner to render medical care, as hereafter provided. If for any reason during the period when medical treatment and care is required, the employee wishes to transfer his treatment and care to another authorized physician, he may do so, in accordance with rules prescribed by the commissioner. In such instance the remuneration of the physician whose services are being dispensed with shall be limited to the value of treatment rendered at minimum fees as established in the schedule for his location, unless payment in higher amounts has been approved as authorized in §13, Paragraph a. <sup>1</sup>If a claimant shall receive treatment in any hospital or other institution operated in whole or in part by the State of New York, the employer shall be liable for food, clothing, and maintenance furnished by the hospital or other institution to such employee. If the employee is unable, due to the nature of the injury, to select such authorized physician and the emergency nature of the injury requires immediate medical treatment and care, or if he does not desire to select a physician, and in writing so advises the employer, the employer shall promptly provide him with the necessary medical care, provided, however, that nothing herein contained shall operate to prevent such employee, when subsequently able to do so, from selecting for continuance of any medical treatment or care required, any physician authorized by the commissioner to render medical care as herein-after provided.

<sup>1</sup> Sentence "If a claimant . . . such employee" inserted by L. 1944, ch. 663.

An employer may maintain a licensed compensation medical bureau, use of which shall be optional with his injured employee: §13-j, subdivision (2), below.

Compare §§13-i, 13-j, and notes thereunder.

*Employee, agent of employer.* An employee exercising his statutory right in choosing a physician does so as agent of the employer and binds the latter for cost of the treatment: *Armstrong v. Weiss and Others*, 168 Misc. 653; 204 S. B. 232.

(2) The commissioner shall prescribe the form of a notice informing employees of their privilege under this chapter, and such notice shall be posted and maintained by the employer in a conspicuous place or places in and about his place or places of business.

The commissioner has prescribed the notice form required by this subdivision (2) to be posted by employers, including self-insurers. It is No. 105. Its size may not be reduced without his consent: Rules of Comr., Rule 20. It contains numbered instructions addressed "To employers" and "To employees." Combined with this posting notice is the posting notice required by §51, below.

To avoid the solicitation banned by §13-i below, the commissioner may so formulate the notice required by this subdivision (2) as to exclude the names of physicians from it: Opinion of Attorney-General, July 8, 1935.

(3) The employer shall have the right to transfer the care of an injured employee from the attending physician, whether chosen originally by the employee or by the employer, to another authorized physician (1) if the interest of the injured employee necessitates the transfer or (2) if the physician has not been authorized to treat injured employees under this act or (3) if he has not been authorized under this act to treat the particular injury or condition as provided by §13-b (2). An authorized physician from whom the case has been transferred shall have the right of appeal to an arbitration committee as provided in subdivision two of §13-g and if said arbitration committee finds that the transfer

was not authorized by this section, said employer shall pay to the physician a sum equal to the total fee earned by the physician to whom the care of the injured employee has been transferred, or such proportion of said fee as the arbitration committee shall deem adequate.

Rules of Procedure governing arbitration appear below, page 2736.

(4) No claim for medical or surgical treatment shall be valid and enforceable, as against such employer, or employee, unless within forty-eight hours following the first treatment the physician giving such treatment furnish to the employer and <sup>2</sup>*directly* to the industrial commissioner a preliminary notice of such injury and treatment, <sup>3</sup>within <sup>4</sup>fifteen days thereafter a more complete report <sup>5</sup>and subsequent thereto progress reports if requested in writing by the industrial commissioner, industrial board, employer or insurance carrier, at intervals of not less than three weeks apart or at less frequent intervals if requested on <sup>6</sup>forms prescribed by the industrial commissioner. The industrial board may excuse the failure to give such notices within the designated periods when it finds it to be in the interest of justice to do so. Upon receipt of the notice herein provided the employer shall be entitled to have the claimant examined by a qualified physician at a place reasonably convenient to the claimant and in the presence of the claimant's physician, and refusal by the claimant to submit to such examination at such time or times as may reasonably be necessary in the opinion of the industrial board, shall bar the claimant from recovering compensation for any period during which he has refused to submit to such examination.

<sup>1</sup> Word "and" eliminated by L. 1940, ch. 542.

<sup>2</sup> Word "fifteen" substituted for word "twenty" by L. 1940, ch. 542.

<sup>3</sup> Words "and subsequent . . . frequent intervals if requested" inserted by L. 1940, ch. 542.

<sup>4</sup> Word "forms" substituted for words "a form" by L. 1940, ch. 542.

<sup>5</sup> Words "directly to" inserted by L. 1944, ch. 472.

All C-4 reports of attending physicians should be verified for evidence purposes: Rules of Commissioner, Rule 4.

Concerning physical examinations, see also §13, subdivision (d) above, and §§19, 19-a, 41; Rules of Board, Rule 11, and Rules of Commissioner, Rule 25.

(5) No claim for specialist consultations, surgical operations, or physiotherapeutic procedures costing more than twenty-five dollars shall be valid and enforceable, as against such employer, unless such special services shall have been authorized by the employer or by the commissioner, or unless such authorization shall have been unreasonably withheld, or unless such special services are required in an emergency. No claim for x-ray examinations or special diagnostic laboratory tests costing more than ten dollars shall be valid and enforceable, as against such employer, unless such special services shall have been authorized by the employer or by the commissioner, or unless such authorization shall have been unreasonably withheld, or unless such special services are required in an emergency.

(6) *Any interference by any person with the selection by an injured employee of an authorized physician to treat him, and the improper influencing or attempt by any person improperly to influence the medical opinion of any physician who has treated or examined an injured employee shall be a misdemeanor\*.* [Subdivision (6) added by L. 1944, ch. 471.]

[This §13-a added by L. 1935, ch. 258, and amended by L. 1940, ch. 542; L. 1944, chs. 471, 472, 663.]

\* Italics ours.

See also Rules of Industrial Commissioner, relative to authorization, selection, reports and supervision of specialists

§13-b. <sup>1</sup>Medical practice committee, authorization of physicians, medical bureaus, and laboratories by commissioner. 1. <sup>2</sup>The industrial commissioner shall appoint for, and with jurisdiction in, all

bureaus operated by qualified physicians to be authorized to render medical care, and of laboratories and bureaus engaged in x-ray diagnosis or treatment or in physiotherapy or other therapeutic procedures, under this chapter. Each member

ized to write workmen's compensation insurance in this state or from any self-insurer, whether such employment or fee relates to a workmen's compensation claim or otherwise. The attorney general, upon request, shall advise and assist such com-

of such medical practicing a population of one million or more, and in other counties upon the recommendation of the medical society of the county or of a board designated by such county society or of a board representing duly licensed physicians of any other school of medical practice in such county, the industrial commissioner may authorize physicians licensed to practice medicine in the State of New York to render medical care under this chapter. If, within sixty days after the commissioner requests such recommendations in any counties having a population of less than one million, the medical society of such county or board

commissioner, provided, that:

(a) Emergency (first aid) medical care may be rendered under this chapter by any physician licensed to practice medicine in the state of New York without authorization of the commissioner under this section; and

(b) A licensed physician who is a member of a constituted medical staff of any hospital may render medical care under this chapter while an injured employee remains a patient in such hospital; and

(c) under the active and personal supervision

vision shall be evidenced by signed records of instructions for treatment and signed records of the

patient's condition and progress. Reports of such treatment and supervision shall be made by such physician to the commissioner on such forms and at such times as the commissioner may require. [This subdivision 1 amended by L. 1935, ch. 930; L. 1944, ch. 459.]

<sup>1</sup> Sidelittle amended by L. 1944, ch. 459. Formerly read "Authorization of physicians by commissioner."

L. 1944, ch. 459

<sup>4</sup> Word "the" substituted for word "each" by L. 1944, ch. 459

<sup>5</sup> Word "of" substituted for word "by" by L. 1944, ch. 459

<sup>6</sup> Words "in such county, the industrial commissioner may" inserted by L. 1944, ch. 459

<sup>7</sup> Words "in any counties having a population of less than one million" inserted by L. 1944, ch. 459.

<sup>8</sup> Word "such" substituted for word "any" by L. 1944, ch. 459

<sup>9</sup> Word "such" substituted for article "a" by L. 1944, ch. 459

<sup>10</sup> Word "outstanding" substituted for word "qualified" by L. 1944, ch. 459

<sup>11</sup> Word "requisite" substituted for word "requested" by L. 1944, ch. 459

<sup>12</sup> Words "medical practice committee or of the" inserted by L. 1944, ch. 459

<sup>13</sup> Article "a" inserted by L. 1944, ch. 459

<sup>14</sup> Word "by" substituted for word "of" by L. 1944, ch. 459

<sup>15</sup> Words "medical appeals unit of the" inserted by L. 1944, ch. 459

<sup>16</sup> Words "clause (g) of" stricken out by L. 1944, ch. 459

<sup>17</sup> Word "five" substituted for word "four" by L. 1944, ch. 459.

<sup>18</sup> Word "registered" inserted by L. 1935, ch. 930

2. A physician licensed to practice medicine in

this chapter with the <sup>2</sup>medical practice committee if his office is located in a county having a population of one million or more, or, if his office is located in any other county, with the medical society in such county, or with a board designated by such

tivities under this chapter to such medical care as his experience and training qualify him to render. He shall further agree to refrain from subsequently treating for remuneration, as a private patient, any person seeking medical treatment in connection with, or as a result of, any injury compensable under this chapter, if he has been removed from the list of physicians authorized to render medical care under this chapter, or if the person seeking such treatment has been transferred from his care in accordance with the provisions of this chapter. This agreement shall run to the benefit of the injured person so treated, and shall be available to him as a defense in any action by such physician for payment for treatment rendered by a physician after he has been removed from the list of physicians authorized to render medical care under this chapter, or after the injured person was transferred from his care in accordance with the provisions of this chapter. The <sup>3</sup>medical practice committee, or the medical society or the board designated by it, or the board as otherwise provided <sup>4</sup>under this section, if it deems such licensed physician duly qualified, shall recommend to the commissioner that such physician be authorized to render medical care under this

chapter, and such recommendation and authorization shall specify the character of the medical care which such physician is qualified and authorized to render under this chapter. <sup>12</sup>Such recommendations shall be advisory to the industrial commissioner only and shall not be binding or conclusive upon him. <sup>13</sup>The licensed physician may present <sup>14</sup>to the medical practice committee or to the medical society or board, evidences of additional qualifications at any time subsequent to his original application. If the <sup>15</sup>medical practice committee or the medical society or board fails to recommend to the commissioner that a physician be authorized to render medical care under this chapter, the physician may appeal to <sup>16</sup>the medical appeals unit of the industrial council as provided in <sup>17</sup>subdivision <sup>18</sup>five of §10-a of the labor law. [This subdivision 2 amended by L. 1944, ch. 459.]

<sup>1</sup> Words "an application for authorization under this chapter" inserted by L. 1944, ch. 459.

<sup>2</sup> Words "medical practice . . . county, with the" inserted by L. 1944, ch. 459.

<sup>3</sup> Word "such" substituted for word "the" by L. 1944, ch. 459.

<sup>4</sup> Words "in which his office is located" eliminated by L. 1944, ch. 459.

<sup>5</sup> Word "with" substituted for word "by" by L. 1944, ch. 459.

<sup>6</sup> Words "an application for authorization under this chapter" eliminated by L. 1944, ch. 459.

<sup>7</sup> Words "medical practice committee, or the" inserted by L. 1944, ch. 459.

<sup>8</sup> Article "the" substituted for article "a" by L. 1944, ch. 459.

<sup>9</sup> Article "the" substituted for words "by a" by L. 1944, ch. 459.

<sup>10</sup> Words "under this" substituted for word "in" by L. 1944, ch. 459.

<sup>11</sup> Word "thirteen-b" stricken out by L. 1944, ch. 459.

<sup>12</sup> Following sentence inserted by L. 1944, ch. 459.

<sup>13</sup> Words "to the medical practice committee or" inserted by L. 1944, ch. 459.

<sup>14</sup> Words "medical practice committee or the" inserted by L. 1944, ch. 459.

<sup>15</sup> Words "the medical appeals unit of" inserted by L. 1944, ch. 459.

<sup>16</sup> Words "clause (g) of" stricken out by L. 1944, ch. 459.

<sup>17</sup> Word "five" substituted for word "four" by L. 1944, ch. 459.

*Constitutionality.* This subdivision does not violate the Federal or State constitutions nor does it constitute an unlawful delegation of power: *Szold v. Outlet Embroidery Supply Co.*, 274 N. Y. 271, affirming 248 App. Div. 865; 159 Misc. 911; appeal dismissed, 303 U.S. 623; 204 S.B. 235.

Physiotherapist who treated injured employee upon advice of carrier's physician and with carrier's acquiescence must look to the employer and its carrier for payment and may not recover his fee for such treatments from the employee: *Sprague v. Spencer*, 172 Misc. 123; 204 S.B. 242.

A physician not authorized under this §13-b may not recover by legal process his fee for treating an injured employee: §13-f, below; *Szold v. Outlet Embroidery Supply Co.*, 159 Misc. 911; 248 App. Div. 865; 274 N.Y. 271; 275 N.Y. Rep. 542; 303 U.S. 623; 204 S.B. 235.

For bills of New Jersey physicians giving medical treatment to residents of New Jersey injured in New York State, see Opinion of Attorney-General, July 8, 1936.

3. Laboratories and bureaus engaged in x-ray diagnosis or treatment or in physiotherapy or other therapeutic procedures and which participate in the diagnosis or treatment of injured workmen under this chapter shall be operated or supervised by qualified physicians duly authorized under this chapter <sup>1</sup>and shall be subject to the provisions of §13-c of this chapter. The person in charge of diagnostic clinical laboratories duly authorized under this chapter shall possess the qualifications

established by the public health council for approval by the state commissioner of health or, in the city of New York, the qualifications approved by the board of health of said city and shall maintain the standards of work required for such approval. [This subdivision 3 amended by L. 1935, ch. 930; this §13-b added by L. 1935, ch. 258.]

<sup>1</sup> Words "and shall . . . of this chapter" inserted by L. 1935, ch. 930.

Concerning x-ray services and payment therefor, see also Rules of Commissioner.

§13-c. Licensing of compensation medical bureaus<sup>1</sup> and laboratories. <sup>2</sup>1. The commissioner may, upon the recommendation of the <sup>3</sup>medical practice committee in counties having a population of one million or more, and in other counties upon the recommendation of the medical society of <sup>4</sup>the county <sup>5</sup>or of a board as provided in §13-b, authorize and license compensation medical bureaus <sup>6</sup>in such counties <sup>7</sup>operated by qualified physicians wholly or principally for the diagnosis and treatment of industrial injuries or illnesses in respect <sup>8</sup>to which they are authorized to render medical care under this chapter. <sup>9</sup>The commissioner, however, shall not authorize or license more than two such bureaus operated by the same physician. <sup>10</sup>The commissioner may, upon the recommendation of the <sup>11</sup>medical practice committee in counties having a population of one million or more, and in other counties upon the recommendation of the medical society of <sup>12</sup>the county or of a board as provided in §13-b, authorize and license separate laboratories and bureaus engaged in x-ray diagnosis or treatment and clinical diagnosis, or in physiotherapy or other therapeutic procedures, which participate in the diagnosis or treatment of injured workmen under this chapter. <sup>13</sup>The commissioner, however, shall not authorize or license more than two such laboratories or bureaus operated by the same physician. Application for such authorization shall be made on forms to be furnished by the commissioner, and shall disclose in full the nature of the personnel and equipment of such bureaus. <sup>14</sup>If within sixty days after such application has been filed the <sup>15</sup>medical practice committee, medical society, or board refuses or fails to act or refuses to recommend to the commissioner that such license be granted, the applicant may appeal to the <sup>16</sup>medical appeals unit of the industrial council as provided in subdivision <sup>17</sup>five of §10-a of the labor law. Each such bureau <sup>18</sup>or laboratory which receives such authorization shall:

(a) Make reports on its personnel and equipment in such form and at such times as may be required by the commissioner; and

(b) Be subject to inspection by the commissioner <sup>17</sup>or the medical practice committee or the medical society of the county in which such bureau or laboratory is located; and

(c) Pay to the commissioner a license fee of fifty dollars per annum for each office of such bureau, <sup>18</sup>or ten dollars per annum for a separate laboratory. [This subdivision 1 amended by L. 1935, ch. 930; L. 1941, ch. 307; L. 1944, ch. 459.]

<sup>1</sup> Words "and laboratories" added by L. 1935, ch. 930.

<sup>2</sup> Number "1" substituted for number "(1)" by L. 1944, ch. 459.

<sup>3</sup> Words "medical practice . . . recommendation of the" inserted by L. 1944, ch. 459.

<sup>4</sup> Word "the" substituted for word "each" by L. 1944, ch. 459.

<sup>5</sup> Words "or of a board designated by such county society" eliminated by L. 1944, ch. 459.

<sup>6</sup> Words "in such counties" inserted by L. 1944, ch. 459.

<sup>7</sup> Word "operated" substituted for word "maintained" by L. 1935, ch. 930.

\* Word "to" substituted for word "of" by L. 1944, ch. 459

\* Following sentence inserted by L. 1944, ch. 459

\* Sentence "The commissioner . . . this chapter" inserted by L. 1935, ch. 930

\* Sentence "The commissioner . . . same physician" inserted by L. 1944, ch. 459

\* Words "No such authorization shall be made in the absence of recommendation from the appropriate society or board" stricken out and sentence "If within . . . the labor law" inserted by L. 1941, ch. 307

\* Words "Medical practice committee" inserted by L. 1944, ch. 459

\* Words "medical appeals unit of the" inserted by L. 1944, ch. 459

\* Word "five" substituted for word "four" by L. 1944, ch. 459

\* Words "or laboratory" inserted by L. 1935, ch. 930

\* Words "or the medical practice committee" inserted by L. 1944, ch. 459

\* Words "or ten dollars . . . laboratory" inserted by L. 1935, ch. 930.

Employers may maintain compensation medical bureaus §13-j, subdivision (2).

Hospitals may not be licensed to operate compensation medical bureaus. Rules of Commissioner

Lay-owned medical laboratories—licensing requirements Lay-owned or -incorporated laboratories and compensation medical bureaus are entitled to license subject to the requirements of

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r. (c) of this §13-c for each office of a medical bureau maintained by it, the fee is not a tax. Opinion of Attorney General, November 15, 1935.

\*2 No claim for services in connection with x-ray examination, diagnosis, or treatment of any claimant shall be valid or enforceable except by a physician duly authorized as a roentgenologist by the industrial commissioner for services performed by such physician or under his immediate supervision. [This subdivision 2 added by L. 1944, ch. 459; this §13-c added by L. 1935, ch. 253]

\* This subdivision 2 added by L. 1944, ch. 459

§13-d Removal of physicians from lists of those authorized to render medical care. 1 The "medical practice committee, medical society, or board that has recommended the authorization of physicians to render medical care . . . investigate, hear, and . . . all charges as to professional . . .

conduct, with their findings and recommendations . . .

tion, and report may be made by the "society or board of an adjoining county "having a population of less than one million, or if no adjoining county have such a population, then by the society or board of the nearest such county, upon the request of the medical society of the county in which the alleged misconduct or infraction of this chapter occurred. The "medical appeals unit of the industrial council and of the department may review the "findings and recommendation of such "medical practice committee . . . application of . . . may reopen . . . The "find- . . . such "com- mittee, society, board, and medical appeals unit of the industrial council shall be "advisory to the industrial commissioner "only, and shall not be bind-

ing or conclusive upon him [This subdivision 1 amended by L. 1941, ch. 307, L. 1944, ch. 459.]

\* Words "medical practice committee" inserted by L. 1944, ch. 459

\* Words "make findings with respect to" substituted for word "determine" by L. 1944, ch. 459.

\* Words "as to" substituted for word "of" by L. 1944, ch. 459

\* Word "of" substituted for word "by" by L. 1944, ch. 459.

\* Words "or by any compensation medical bureau licensed" eliminated by L. 1941, ch. 307.

\* Words "medical appeals unit of the" inserted by L. 1944, ch. 459

\* Words "findings and recommendation with respect thereto" substituted for words "determination thereon" by L. 1944, ch. 459

\* Words "In counties having a population of less than one million" inserted by L. 1944, ch. 459

\* Words "findings, recommendation and" inserted by L. 1944, ch. 459

\* Words "and determination" eliminated by L. 1944, ch. 459.

\* Words "society or" inserted by L. 1944, ch. 459

\* Words "having nearest such county" inserted by L. 1944, ch. 459

\* So in original [Evidently should be "of"]

\* Words "findings and recommendation" substituted for word "determination" by L. 1944, ch. 459.

\* Word "findings" inserted by L. 1944, ch. 459

\* Words "committee . . . unit of the" inserted by L. 1944, ch. 459

\* Words "advisory to" substituted for words "final, binding, and conclusive upon" by L. 1944, ch. 459.

\* Words "only . . . upon him" added by L. 1944, ch. 459. See subdivisions 4 and 4-a of §10-a of the Labor Law for the broad powers of the Industrial Council relative to charges against physicians, including regulation of investigative procedure

2 The commissioner shall remove from the list of physicians authorized to render medical care under this chapter the name of any physician who he shall find after reasonable investigation is disqualified because such physician

(a) has been guilty of professional or other misconduct or incompetency in connection with medical services rendered under this chapter; or

(b) has exceeded the limits of his professional competence in rendering medical care under this chapter, or has made materially false statements "reg the "application for the "practice com- mitt- . . . as provided in §13-b; or

\*(c) has failed to submit full and truthful medi-

\* The changes effected in paragraph (c) by L. 1944, ch. 459,

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cal reports "of all his findings to the employer, and directly to the commissioner "or the industrial board "within the time limits provided in §13-a, subdivision 4, of this chapter with the exception of injuries which do not require "(1) more than ordinary first aid "or more than two treatments by a physician or person rendering first aid, or "(2) loss of time "from regular duties beyond the working day or shift; or

(d) has rendered medical "services under this chapter for a fee less than "that fixed by the commissioner as the minimum rate in his locality; or

\*(e) has solicited, or has employed another to solicit for himself or for another, "professional treatment, examination, or care of an injured employe in connection with any claim under this chapter; "or



(f) has refused to appear before, or to answer upon request of, the commissioner, medical practice committee, industrial board, medical appeals unit of the industrial council, or any duly authorized officer of the state, any legal question, or to produce any relevant book or paper concerning his conduct under any authorization granted to him under this chapter; or

(g) has directly or indirectly requested, received, or participated in the division, transference, assignment, rebating, splitting, or refunding of a fee for, or has directly or indirectly requested, received, or profited by means of a credit or other valuable consideration as a commission, discount, or gratuity in connection with the furnishing of medical or surgical care, diagnosis, or treatment or service, including x-ray examination and treatment, or for or in connection with the sale, rental, supplying, or furnishing of clinical laboratory services or supplies, x-ray laboratory services or supplies, inhalation therapy service or equipment, ambulance service, hospital or medical supplies, physiotherapy or other therapeutic service or equipment, artificial limbs, teeth or eyes, orthopaedic or surgical appliances or supplies, optical appliances, supplies, or equipment, devices for aid of hearing, drugs, medication or medical supplies, or any other goods, services or supplies prescribed for medical diagnosis, care, or treatment under this chapter; except that reasonable payment, not exceeding thirty-three and one-third per centum of any fee received under this chapter for x-ray examination, diagnosis, or treatment, may be made by a physician duly authorized as a roentgenologist to any hospital furnishing facilities for such examination, diagnosis, or treatment. [This subdivision 2 amended by L. 1941, ch. 307; L. 1944, chs. 459, 472.]

<sup>1</sup> Word "regarding" substituted for word "concerning" by L. 1944, ch. 459.

<sup>2</sup> Words "medical practice committee or" inserted by L. 1944, ch. 459.

<sup>3</sup> Words "in the county in which his office is located" eliminated by L. 1944, ch. 459.

<sup>4</sup> Words "of the" eliminated by L. 1944, ch. 459.

<sup>5</sup> Words "designated by it, or of a board" eliminated by L. 1944, ch. 459.

<sup>6</sup> Words "of all his findings to the employer, and directly" inserted by L. 1944, ch. 459; words "required to be made by him" eliminated by L. 1941, ch. 307.

<sup>7</sup> Word "or," eliminated by L. 1941, ch. 307, restored by L. 1944, ch. 459.

<sup>8</sup> Words "or the employer within the time limits . . . day or shift" inserted by L. 1941, ch. 307; words "or the employer" eliminated by L. 1944, ch. 459.

<sup>9</sup> Number "(1)" inserted by L. 1944, ch. 459.

<sup>10</sup> Words "or more . . . first aid" inserted by L. 1944, ch. 459.

<sup>11</sup> Number "(2)" inserted by L. 1944, ch. 459.

<sup>12</sup> Words "from regular duties" inserted by L. 1944, ch. 459.

<sup>13</sup> Word "services" substituted for word "service" by L. 1944, ch. 459.

<sup>14</sup> Word "that" inserted by L. 1944, ch. 459.

<sup>15</sup> Former paragraph (e) deleted and former paragraph (f) relettered (e) by L. 1944, ch. 459. Deleted paragraph (e) read as follows: "(e) has participated in the division, transference, assignment, rebating, splitting, or refunding of a fee for medical care under this chapter." Compare new paragraph (g).

<sup>16</sup> Word "the" eliminated by L. 1944, ch. 459.

<sup>17</sup> Rest of subdivision added by L. 1944, ch. 459.

**§3.** Any person who violates or attempts to violate, and any person who aids another to violate or attempts to induce him to violate the provisions of paragraph (g) of subdivision two of this section shall be guilty of a misdemeanor. [This subdivision 3 inserted by L. 1944, ch. 459.]

<sup>1</sup> This subdivision 3 inserted by L. 1944, ch. 459.

**§4.** Nothing in this section shall be construed as limiting in any respect the power or duty of the commissioner to investigate instances of misconduct, either before or after investigation by the medical practice committee or a medical society or board as herein provided, or to temporarily suspend the authorization of any physician that he may believe to be guilty of such misconduct. [This subdivision 4 numbered and amended by L. 1944, ch. 459; this §13-d added by L. 1935, ch. 258.]

<sup>1</sup> Number "4" inserted by L. 1944, ch. 459.

<sup>2</sup> Words "the medical practice committee or" inserted by L. 1944, ch. 459.

For cases involving removal of physicians from list of those authorized to treat workmen's compensation cases, see *Matter of Sacharoff*, 44 N.Y.S. 2d 117, and *Somberg v. Miller*, 266 App. Div. 328.

**§13-e.** Revocation of licenses of compensation medical bureaus. The commissioner may revoke the license of any compensation medical bureau upon a finding certified to him by the medical practice committee, or by a medical society, or by a board designated by such medical society or otherwise, as provided under §13-b, that has recommended the licensing of such compensation medical bureau, or by the medical appeals unit of the industrial council, that such bureau has been guilty of professional or other misconduct, or of violation of the provisions of this chapter, or that the personnel of such bureau is not properly qualified under this chapter, or that the equipment of such bureau is inadequate for the proper rendering of medical care.<sup>10</sup>

<sup>11</sup>The medical appeals unit of the industrial council of the department may review the determination of such medical practice committee, medical society, or board, and on application of the compensation medical bureau accused must do so, and may reopen the matter and receive further evidence. The decision and recommendation of the medical appeals unit of the industrial council shall be advisory to the industrial commissioner, and shall not be binding or conclusive upon him.

The medical appeals unit of the industrial council shall prescribe the rules of procedure governing the investigation, hearing, and determination of all charges of professional or other misconduct under this section.

Nothing in this section shall be construed as limiting in any respect the power or duty of the commissioner to investigate instances of misconduct, or violations of the provisions of this chapter, or violations of rules promulgated by the industrial commissioner under the provisions of this chapter, or failure to submit full and truthful medical reports directly to the industrial commissioner within the time limits provided under subdivision four of §13-a of this chapter, either before or after investigation or hearing by the medical practice committee, or by a medical society or board, or review by the medical appeals unit as herein provided, and to temporarily suspend the license of any laboratory or employer's medical bureau, or after a hearing to revoke the same. [This §13-e added by L. 1935, ch. 258; amended by L. 1941, ch. 307; L. 1944, ch. 459.]

<sup>1</sup> Word "of" substituted for word "to" by L. 1944, ch. 459.

<sup>2</sup> Word "may" substituted for word "shall" by L. 1944, ch. 459.

<sup>3</sup> Words "medical practice committee, or by a" inserted by L. 1944, ch. 459.

<sup>4</sup> Words "by a" inserted by L. 1944, ch. 459.

<sup>5</sup> Word "designated" substituted for word "designed" by L. 1941, ch. 307.

<sup>6</sup> Word "county" eliminated by L. 1944, ch. 459.

<sup>1</sup> Word "otherwise" inserted and words "by a board" eliminated by L 1944, ch 459.

<sup>2</sup> Word "under" substituted for word "in" by L 1944, ch 459.

<sup>3</sup> Words "the medical appeals unit of" inserted by L 1944, ch 459.

<sup>4</sup> Words "except on request for review within sixty days after such certification," inserted by L 1941, ch 307, stricken out by L 1944, ch. 459.

<sup>5</sup> Words "The medical . . . practice committee" inserted by L 1944, ch. 459.

<sup>6</sup> Words "and on application of the" inserted and words "may upon direction of the commissioner or upon its own motion investigate the alleged grounds for revocation of the license of any" eliminated, by L 1944, ch 459.

<sup>7</sup> Words "or after a hearing revoke the same" inserted and words "that he may believe to be guilty of such misconduct" eliminated by L 1941, ch 307.

<sup>8</sup> Word "to" inserted by L 1944, ch. 459.

<sup>9</sup> Word "and" substituted for word "or" by L 1941, ch. 307.

<sup>10</sup> Word "compensation" eliminated and words "laboratory or employer's" inserted by L 1941, ch 307.

<sup>11</sup> Words "or after a hearing revoke the same" inserted and words "that he may believe to be guilty of such misconduct" eliminated by L 1941, ch 307.

<sup>12</sup> Word "to" inserted by L 1944, ch. 459.

of this chapter to render medical care under this

ant, shall collect or receive a fee from such claimant within this state, but shall have recourse for payment of services rendered only to the employer under the provisions of this chapter. Hospitals shall not be entitled to receive the remuneration paid to physicians on their staff for medical and surgical services.

(2) Whenever his attendance at a hearing is required, the physician of the injured employee shall be entitled to receive a fee from the employer, or carrier, in an amount to be fixed by the industrial board in addition to any fee payable under §120. [This §13-f added by L. 1935, ch. 258; and amended by L. 1940, ch. 60.]

<sup>1</sup> Words "industrial board" substituted for word "commissioner" by L. 1940, ch. 60.

Concerning payment of bills for x-ray and other consultants, see Rules of Commissioner, Rules 7, 9, 13 and 22. Medical laboratories. Lawfully qualified medical laboratories may submit bills for services. Opinion of Attorney-General, May 26, 1936.

Municipal hospitals. The Department of Hospitals of the City of New York is entitled to the fee for services rendered in emergency cases. Opinion of Attorney-General, April 10, 1936.

Physiotherapists. Payment of fees of a physiotherapist figured in *Sprague v. Spencer*, 172 Misc 123, 204 S.D. 242. Unauthorized physicians. A physician not authorized under §13 b, above, may not recover his fee for treating an injured employee. *Sault v. Outlet Embroidery Supply Co.*, 159 Misc. 911; 248 App. Div. 805, 274 N.Y. 271, 275 N.Y. Rep. 542, 303 U.S. 623; 204 S.D. 235.

Witness fees. Fees for appearance and testimony are payable by the employer or carrier even if the claim is found to be not compensable. Opinion of Attorney-General, March 3, 1937.

§13-g. Payment of bills for medical care. (1) Unless within thirty days after a bill has been ren-

dered to the employer by the physician or hospital which has treated an injured employee, such employer shall have notified the commissioner and such physician or hospital in writing that such employer demands an impartial examination of the fairness of the amount claimed by such physician or hospital for his or its services, the right to such an impartial examination shall be deemed to be waived and the amount claimed by such physician or hospital shall be deemed to be the fair value of the services rendered by him or it.

(2) If the parties fail to agree as to the value of medical aid rendered under this chapter to a claimant residing in a county having a population of one million or more, such value shall be decided by the medical practice committee, and in other cases it shall be decided by an arbitration committee consisting of two physicians designated by the president of the medical society of the county in which the claimant resides, two physicians who are members of the Medical Society of the State of New York, appointed by the employer or carrier, and one physician, also a member of the Medical Society of the State of New York, appointed by the industrial commissioner. The majority decision of any such committee shall be conclusive upon the parties as to the value of the services rendered. If the physician whose charges are being arbitrated is a member in good standing of the New York Osteopathic Society or the New York Homeopathic Society, the members of such arbitration committee to be appointed in any county having a population of less than one million shall be physicians of such organization and the president of such organization shall make the designation provided herein.

<sup>1</sup> Words "to a claimant . . . million or more" inserted by L 1944, ch. 467.

<sup>2</sup> Words "by the medical . . . be decided" inserted by L 1944, ch. 467.

<sup>3</sup> Word "and" eliminated by L 1944, ch. 467.

<sup>4</sup> Words "who are" inserted and word "also" eliminated by L 1944, ch. 467.

<sup>5</sup> Words "and one physician . . . by the industrial commissioner" inserted by L 1944, ch. 467.

<sup>6</sup> Words "any such" substituted for words "the arbitration" by L 1944 ch 467.

<sup>7</sup> Sentence "In the event of equal division, the committee shall select a fifth physician, also a member of the medical society of the state of New York, whose decision shall be conclusive" eliminated by L 1944, ch. 467.

<sup>8</sup> Words "in any . . . one million" inserted and word "similarly" eliminated by L 1944, ch. 467.

(3) The parties to arbitration proceedings under this section shall each pay to the industrial commissioner a sum equal to five per centum of the amount payable under such decision, or a minimum

transferred to the state treasury to reimburse it on account of the expense of administering this chapter.

<sup>1</sup> Words "in counties having a population of less than one million" inserted by L 1944, ch. 467.

<sup>2</sup> Words "and in all . . . this chapter" inserted by L. 1944, ch. 467.

(4) In claims where the employer has failed to secure compensation to his employees as required by §50 of this chapter, the board may make an award for the value of medical services or treatment rendered to such employees, in accordance with the schedule of fees and charges prepared and established under the provisions of §13-a of this chapter. Such

award shall be made to the physician or hospital entitled thereto. A default in the payment of such award may be enforced in the manner provided for the enforcement of compensation awards as set forth in §26 of this chapter.

In all cases coming under this subdivision the payment of the claim of the physician or hospital for medical or surgical services or treatment shall be subordinate to that of the claimant or his beneficiaries. [This §13-g added by L. 1935, ch. 258; and amended by L. 1940, ch. 542; L. 1944, ch. 467.]

<sup>1</sup> Subdivision (4) added by L. 1940, ch. 542.

*Failure to request timely arbitration.* A physician brought an action at law for amount due for services rendered to employee of defendant employer injured in an industrial accident. Said employer had made no demand on the Industrial Commissioner for examination of the fairness of the amount claimed until more than sixty days had elapsed after rendition of the bill. The physician refused to submit his bill to arbitration contending the right to such relief had expired at the end of thirty days. Judgment for plaintiff upheld. *Raisman v. Ashford Roofing Co., Inc.*, 261 App. Div. 782.

*Hospital bills.* The arbitration provisions of this section apply to hospitals as well as to physicians: *Reddy v. Pegram*, 169 Misc. 841; 204 S.B. 244.

Arbitration provisions relative to payment of disputed medical bills are not in conflict with New York City Charter: Opinion of Attorney-General, March 10, 1938.

§13-h. Medical treatment by 'hospitals. Hospitals maintained wholly by public taxation may treat only emergency cases under this chapter, and may treat such emergency cases only so long as the emergency exists; <sup>2</sup>provided, however, that <sup>3</sup>this section shall not be applicable, where there is not available a hospital other than a hospital maintained by taxation, nor shall it prevent any municipal, county, or state hospital from rendering medical services to employees of such hospital or such political subdivision. <sup>4</sup>This section shall not apply to cases arising under article 4-A of this chapter; nor to any case where the employer or carrier refuses or neglects to authorize any hospital services that may be required under this chapter after the employee shall have requested the employer or carrier to furnish the same, or when the nature of the injury required such services and the employer or his superintendent or foreman having knowledge of such injury shall have neglected to provide the same, in such cases the injured employee may select any hospital for care and treatment in accordance with this chapter and the rules prescribed by the commissioner. [This §13-h added by L. 1935, ch. 258; amended by L. 1940, ch. 548; L. 1943, ch. 442.]

<sup>1</sup> Word "public" stricken out by L. 1943, ch. 442.

<sup>2</sup> Words "provided however, that this section shall not apply to cases arising under article 4-A of this chapter" inserted by L. 1940, ch. 548.

<sup>3</sup> Words "this section shall not apply to cases arising under article 4-A of this chapter" stricken out by L. 1943, ch. 442.

<sup>4</sup> Remainder of this section added by L. 1943, ch. 442.

Concerning copies of records, duration of emergency status, and identification of insurance company visitants in hospital cases, see Rules of Commissioner, Rules 5, 15, and 16.

§13-i. Solicitation prohibited. Any person who shall make it a business to solicit employment for any person authorized by this chapter to render medical care to an injured employee in connection with any claim under this chapter, shall be guilty of a misdemeanor, except that the employer shall have the right subject to regulations prescribed by the commission, to recommend to the injured employee the names of enrolled physicians who he be-

lieves to be competent to treat him. [This §13-i added by L. 1935, ch. 258.]

Rules of Commissioner, Rule 19, prohibits advertising of any nature on compensation work.

Concerning prosecutions under this §13-i, see Opinions of Attorney-General, November 7, 1935, and September 20, 1937.

*Solicitation construed.* For rules regarding supplying of names of authorized physicians by carriers to their policyholders and procedure to be followed by medical inspectors and consultants engaged by insurance carriers and employers, see Opinions of Attorney-General, August 10, 1936, and May 19, 1937. The permission to recommend a physician is granted to the carrier only where the employee has waived his right or is unable to exercise it: Opinion of Attorney-General, May 14, 1936. Compare 13-a, above, and §13-j, immediately following.

§13-j. Medical or surgical treatment by insurance carriers and employers. (1) An insurance carrier shall not participate in the treatment of injured workmen, except, that it may employ medical inspectors to examine compensation cases periodically, while under treatment, and report upon the adequacy of medical care, and other matters relative to the medical conduct of the case, <sup>1</sup>a copy of which report shall be filed directly with the industrial commissioner within ten days, <sup>2</sup>and that it may maintain rehabilitation bureaus operated by qualified physicians if authorized by the commissioner in accordance with §13-c of this chapter. (2) An employer may maintain a compensation medical bureau at the place or places of employment, if such bureau is required because of the nature of the industrial hazards, or the frequency of injuries to employees arising out of industry. Such bureau or bureaus shall be authorized and licensed pursuant to §13-c, and their use by an injured employee shall be optional in accordance with the provisions of §13-a. [This §13-j added by L. 1935, ch. 258; and amended by L. 1935, ch. 930; L. 1944, ch. 468.]

<sup>1</sup> Words "a copy . . . ten days" inserted by L. 1944 ch. 468.

<sup>2</sup> Words "and that . . . of this chapter" inserted by L. 1935, ch. 930.

#### General Notes on §§13-13-j

*Other provisions governing medical care.* For provisions of the Workmen's Compensation Law governing medical care and treatment additional to those of these §§13-13-j, see §§12, 19, 19-a, 19-b, 25-a, 29, 33, 41, 91, and 124; for supervisory organization and powers of the Industrial Council relative to medical practice and practitioners, Labor Law, §10-a.

*History.* For history of the radical amendment of this §13 and the addition of the ten new §§13-a to 13-j, following, by L. 1935, chs. 258 and 930, see Governor's Message (1934) 184 S.B. 43, and Reports of Physician Committees, N.Y. Legislative Documents (1932) No. 83 and (1934) No. 75. An attack upon the constitutionality of these 1935 medical practice amendments was successfully combated by New York courts and dismissed by the U.S. Supreme Court because no substantial federal question was involved: *Sold v. Outlet Embroidery Supply Co.*, 303 U.S. 623; 274 N.Y. 271; 248 App. Div. 865; 204 S.B. 235. For court interpretation of §13, as it read prior to amendment in 1935, see 162 S.B. 108-111, and 185 S.B. 18-42; for review of the operation of it by the Industrial Commissioner, see Bulletin No. 577, U.S. Bureau of Labor Statistics (1933), pages 27-49.

*Claim filing and notice of accident as affecting liability for medical treatment.* An employer is not liable for medical care and treatment if claim for compensation according to §28 has not been made: *Staff v. Eagle Warehouse & Storage Co.*, 30 S.D.R. 326; 209 App. Div. 307; 133 S.B. 170; or if notice of accident according to §18 has not been given: *Schultz v. Flexlume Corp.*, 230 App. Div. 748; 185 S.B. 26.

*Housekeeping and other expenses necessitated by accident-carrier's liability.* The Industrial Board made award for services of a housekeeper necessitated by an accident: *Kuinkowski v. Lustrader Construction Co.*, affirmed, 214 App. Div. 741; 140 S.B. 121; and for artificial milk for an infant

necessitated by accidental impairment of a mother's lactation: *Moore v. Matland Estate*, 32 S D R 409, 140 S B 120.

*Liability for disability period preceding herniotomy.* Liability for disability period dating from an employee's incurment of hernia until operation was performed three months later was charged against the employer and its carrier where the operation was recommended by a physician two days after the accident but the employer failed to provide it until directed so to do by the Department of Labor. *Shades v. McCloskey & Co.*, 259 App Div 766, 204 S B 234.

*Malpractice.* The Court of Appeals held that the amount collected by an injured employee from a physician for malpractice in treating him for his injury was an offset against the compensation provided by the Workmen's Compensation Law: *Parchefsky v. Kroll Bros*, 267 N Y 410, 185 S B 369.

State employee who suffered injury in course of her employment and subsequent aggravation thereof by faulty diagnosis of a doctor in the same employ contained that she had two remedies: (1) to claim workmen's compensation for her initial injury only and (2) to pursue a claim against the State for its alleged negligence in the diagnosis and treatment of her injury. Held, that the alleged negligence and/or malpractice on the part of the State may be separated from the original injury. *Robison v. State of New York*, 176 Misc 73, 263 App Div 240, 214 S B 159.

*Medical expenses—imitations.* The \$5,000 and \$4,000 compensation maximums of §§15, subdivisions 2 and 5, for temporary disability do not limit the liability of employers for medical expenses nor does the liability of an employer or carrier for medical treatment and care terminate with the end of the compensation period. *Lawrence v. N Y Butchers Dressed Meat Co.*, 266 N Y. Rep. 425, 13 Ind Bul 334.

#### RULES AND PROCEDURE

(Promulgated by the Industrial Commissioner of the State of New York pursuant to Chapter 258 of the Laws of 1935, as amended to August 15, 1941.)

**NOTE.—Rules 1 and 2 have been superseded by the "Rules of the Industrial Council Regulating Procedure before Medical Societies or Compensation Boards of Medical Societies, and before the Industrial Council under §§13-b and 13-d of the Workmen's Compensation Law and §10-a of the Labor Law."**

3. When a physician in association or in co-partnership with another physician or physicians, or through another physician or physicians as employers or agents, maintains and operates one or more offices principally for the treatment of injured claimants under the Workmen's Compensation Act, he shall apply for a compensation medical bureau license.

4. All reports, except Forms C-104 and C-14, shall be submitted to the Industrial Commissioner and the attending physician.

5. The attending physician and one to the employer or insurance carrier. If the specialist acts as attending physician he shall file C-104, C-4, and C-14 reports with the insurance carrier (or with the employer when the carrier is unknown) and with the Industrial Commissioner.

he must secure authorization from the employer or

perform such services.

If telephone request for such authorization is made, it should be confirmed by letter. If such authorization is not forthcoming or is not denied within five working days, or if such denial is not justified medically or otherwise, the special services required for the patient's welfare should be proceeded with on the ground that authorization has been unreasonably withheld.

Such authorization is not required in an emergency. The \$13-a-5 employer for the services \$25 fee applies only to the necessity for such services, but the choice of the specialist is entirely within the jurisdiction of the injured worker.

9. When it is in the interest of the injured employee, and where an x-ray is required and it is impossible to secure the services of a qualified x-ray

ever, shall render a bill for such service to the employer. This in no way, however, deprives the employer or insurance carrier from having other x-ray pictures taken if they so desire.

10. A physician authorized to treat workmen's compensation cases, when requested to supersede another physician, must, before beginning treatment

care of the case and state the reason therefor. If the second physician cannot contact the attending physician, and the claimant's condition requires immediate treatment, the said physician should be in attendance within

case

11. In the event of a serious accident requiring immediate emergency medical aid, an ambulance or any physician may be called to give first-aid treatment.

12. A registered physiotherapist may treat workmen's compensation cases at his own office or bureau when the case is referred to him by an authorized physician. The authorized physician should, however, give written directions to the physiotherapist as to the kind of treatment to be rendered and the number of treatments to be given. These directions must be given in writing by the physician and shall constitute a part of the record of the case.

13. The attending physician or the employer or insurance carrier shall be in attendance within the time specified by the physician in attendance.

14. Physicians treating claimants in hospitals may secure the signature of claimant for authoriza-

tion to obtain copies of any necessary hospital records.

15. The physician in attendance in public hospitals must be the judge as to when the "emergency status" of the case has terminated. In case of a dispute the matter shall be referred to the Compensation Board of the Medical Society of the county in which the hospital is located, for immediate decision.

16. Medical inspectors of insurance companies shall be admitted to hospitals or other institutions where injured employees are confined, upon proper identification, for the purpose of complying with §13-j.

17. Hospitals and dispensaries shall not operate a medical bureau or clinic for the purpose of rendering medical care and treatment to compensation cases.

Hospitals and dispensaries shall not render medical care and treatment to ambulatory compensation cases except for the emergency treatment.

18. No license is required for an employer to operate a first-aid station for emergency treatment, but no subsequent treatments are to be rendered by any one, other than a qualified physician on the minimum fee schedule basis.

19. No advertising matter of any nature on compensation work, by or on behalf of authorized physicians, medical bureaus, or laboratories shall be permitted.

20. No insurance company or self-insurer may reduce the size of NOTICE TO EMPLOYEES (FORM C-105) which is to be posted in all places of employment covered by the Act, unless such permission is granted on application to the Industrial Commissioner.

21. A physician who testifies at hearings or examines claimants or participates in examinations for evidential material for compensation-case hearing purposes only, may accept fees for such services from claimants, employers, or carriers.

22. Hospitals shall render bills for board and room accommodations, medical and surgical supplies, and nursing facilities. Hospitals may render bills for x-ray, physiotherapeutic, anesthesia, and pathologic services when rendered by or under the supervision of salaried physicians on the staff. The names and qualifications of all physicians and persons rendering services for which charges are made by hospitals must be included in all bills and all medical and x-ray reports shall be promptly filed with the employer or its insurance carrier and the Department of Labor.

#### **Rules Governing Recommending of Authorized Physicians by Insurance Carriers and Employers and the Procedure to Be Followed by Medical Inspectors and Consultants**

23. The supplying of names of authorized physicians by insurance carriers to their policyholders is in contravention to §13, as amended by Chapter 253 of the Laws of 1935. Such policyholders and all employers may secure a list of all authorized physicians in the vicinity of their places of business by applying to the Industrial Commissioner of the Department of Labor.

24. Any physician who acts in the capacity of medical inspector for an insurance carrier or employer in the case of an injured employee under the care of another physician shall not participate in the treatment of said injured employee except in

the operation of a rehabilitation clinic or bureau under §13-j of the law. Nothing herein contained affects the right of transfer as provided in §13-a(3).

25. When a medical examination is had under §13-a(4) it shall be by a qualified physician at a place reasonably convenient to the claimant and in the presence of the claimant's physician, if in the latter's opinion his presence is necessary. A duplicate copy of all notices of request for examinations must be sent to the attending physician.

26. No physician designated by an insurance carrier or an employer as a consultant in the case of an injured employee shall subsequently participate in the medical or surgical care of said injured employee, except with the written consent of the injured employee and his attending physician. Nothing herein contained affects the right of transfer as provided in §13-a(3).

#### **Rules Governing the Licensing of and Operation of Compensation Medical Bureaus**

27. The character and frequency of accidents, the number of employees in a given plant and the availability of qualified medical care in the immediate vicinity of the place of employment should be considered in relation to the authorization of an employer's compensation medical bureau.

28. The bureau should be located in the industrial plant or in the immediate vicinity.

29. The question of the necessity of the presence of a physician during working hours, or the availability of a physician at stated hours should be determined by an inspection of the plant to ascertain the nature of the hazards and the frequency of accidents.

30. The bureau shall be well housed with sufficient space, light, and air and shall conform to reasonable sanitary requirements. Proper facilities in the form of personnel for assistance in emergencies, instruments, sterilizers, dressings, drugs, shall be available at all times and in amounts proportionate to the size of the plant and the number of employees. Such facilities shall be adequate for more than mere emergency care and for the more severe type of industrial injury.

31. A bureau license may be given for a stated project which, because of the hazards of the project and the frequency of accidents, requires continued medical care and such license shall be for the life of the given project only. In such cases all employees of all subcontractors shall be covered by the license.

32. No license shall be issued to an employer to cover any but his own employees except as indicated in Rule No. 31.

33. First-aid stations—No license is required to operate a first-aid station by an employer of labor. Such first-aid or emergency station should be properly equipped for first aid in accordance with the type of hazard encountered at the particular place of employment.

34. Form C-105, a notice of the rights of an injured employee and the responsibilities of the employer, shall be posted in each compensation medical bureau and first-aid station.

35. All compensation medical bureaus when operated by summer camps and other institutions, wherein such camps and institutions are operating for a profit, shall be charged a license fee of \$25 per annum for the operation of such medical bureaus which are in operation for six months of the year or less.

Rules of the Medical Appeals Unit of the Industrial Council Regulating Procedure Before the Medical Practice Committee, the Workmen's Compensation Boards and Committees of the County Medical Societies Under §§13 to 13-j, Inclusive, of the Workmen's Compensation Law and §10-a of the Labor Law

1. A. Applications in counties having a population of a million or more, by a duly licensed physician of the State of New York to practice under the Workmen's Compensation Law, or for rerating thereunder, shall be made upon an application form furnished by the Department of Labor which shall be filed at the office of the Medical Practice Committee, 50 Centre Street, Borough of Manhattan, City of New York.

B. Applications in all other counties, by a duly licensed physician of the State of New York to practice under the Workmen's Compensation Law, or for rerating thereunder, shall be made upon a form furnished by the Department of Labor which shall be filed with a Workmen's Compensation Board, or Committee of the County Medical Society.

... million  
... compensation  
... medical bureaus or laboratories operated by  
qualified physicians to render medical care, and such  
other laboratories and bureaus under this chapter  
shall be filed in the office of the Medical Practice  
Committee at 50 Centre Street, Borough of Manhat-

... Medical Practice Committee or the Workmen's Compensation Board, or Committee of the County Medical Society, shall notify the  
... Thereafter, the  
... days from date of  
mailing of such notice of refusal within which to appeal  
to the Medical Appeals Unit of the Industrial Council.

4. Upon the filing of such application or applications, the Medical Practice Committee or the Workmen's Compensation Board, or Committee of the County Medical Society, shall investigate and pass

from such neglect or failure to act, to the Medical Appeals Unit of the Industrial Council.

5. In any investigation or hearing conducted before the Medical Practice Committee or the Work-

(i) The accused physician, medical bureau, or laboratory shall be given thirty (30) days' notice in writing, containing a brief statement of the charge

or charges against such physician, medical bureau, or laboratory, and the time when and place where such charge or charges will be heard. Such notice shall be served either personally or by mail. At least ten

... notice, the  
... laboratory  
... Medical Practice Committee or Compensation Board, or Committee of the County Medical Society, whichever the case may be, answering the charges contained therein.

(b) On the hearing of such charge or charges the accused physician, medical bureau, or laboratory shall be entitled to be represented by counsel and cross-examine witnesses and a stenographic record of the proceeding shall be made. Pursuant to authority of the Medical Practice Committee or the Workmen's Compensation Board, or Committee of the County Medical Society, whichever the case may be, such witnesses shall be placed under oath.

(c) A copy of the record of the proceeding shall be submitted to the Industrial Commissioner, along with the report, findings, and recommendation of the Medical Practice Committee, or Compensation Board, or Committee of the County Medical Society.

(d) Simultaneously, the Medical Practice Committee or Compensation Board, or Committee of the County Medical Society which heard such

tory.

(e) Within thirty (30) days after the service of a copy of the report, findings and recommendations of the Medical Practice Committee, Compensation Board, or Committee of the County Medical Society, as aforesaid, the accused physician or medical bureau may file an appeal therefrom with the Medical Appeals Unit of the Industrial Council by serving a written notice of appeal personally or by mail upon both

Unit of the  
Centre Street  
York, and  
Compensation Board, or Committee of the County Medical Society from whose report, findings, and recommendation the appeal has been taken. Where the report, findings, and recommendations from which an appeal is taken were made prior to June 1, 1914, the period of appeal shall be thirty (30) days from the date of the adoption of these rules, to wit, for a period of thirty (30) days from

6.  
term  
charge  
by sec.  
address

Medical Appeals Unit, or the Department of Labor and received prior to the effective date of these rules shall be deemed due compliance therewith.

7. The Medical Practice Committee or the Workmen's Compensation Board, or Committee of the County Medical Society conducting a hearing shall not be bound by common law or statutory rules of evidence or by technical or formal rules of procedure, except as provided herein; but may make such investigation or inquiry or conduct such hearing in such manner as it deems advisable and necessary in the premises.

8. The Medical Practice Committee shall consist of three members, two of whom shall constitute a

quorum and may proceed with the transaction of such business as may come before them and a decision by a majority of the Committee shall be deemed the decision of the entire Committee.

9. The Industrial Commissioner shall designate a member of the Medical Practice Committee as chairman and shall also appoint a secretary to such committee.

**Rules of the Industrial Council Governing Appeals and Reviews Before the Medical Appeals Unit of the Industrial Council Pursuant to §§13 to 13-j, Inclusive, of the Workmen's Compensation Law and §10-a of the Labor Law**

1. Immediately upon receipt of a notice of appeal or application for review, the secretary of the Medical Appeals Unit shall promptly acknowledge receipt thereof by letter to the appellant or his attorney.

2. Within thirty (30) days after the service of a copy of the report, findings, and recommendations of the Medical Practice Committee, Workmen's Compensation Board, or Committee of the County Medical Society, as provided under the rules governing the Medical Practice Committee, the Workmen's Compensation Board, or Committee of the County Medical Society, the physician, medical bureau, or laboratory may file an appeal therefrom with the Medical Appeals Unit of the Industrial Council by serving a written notice of appeal, personally or by mail, upon both the secretary of the Medical Appeals Unit of the Industrial Council at his office, No. 80 Centre Street, Borough of Manhattan, City of New York, and upon the Medical Practice Committee, or Compensation Board, or Committee of the County Medical Society from whose report, findings, and recommendations the appeal has been taken. Where the report, findings, and recommendations of which an appeal is taken were made prior to June 1, 1944, the time within which said notice of appeal shall be filed with the Medical Appeals Unit of the Industrial Council shall be extended for a period of thirty (30) days from the date of adoption of these rules, to wit, for a period of thirty (30) days from July 19, 1944.

3. The notice of appeal or request for review (both terms are used interchangeably) shall state the charges or the reasons upon which the appeal is based.

A notice of appeal in letter or legal form addressed to the Industrial Commissioner, the Medical Appeals Unit, or the Department of Labor and received prior to the effective date of these rules shall be deemed due compliance therewith.

4. Upon the record of the Medical Practice Committee, Workmen's Compensation Board, or Committee of the County Medical Society and on the briefs when submitted by appellant, the Medical Appeals Unit of the Industrial Council may affirm, reverse, or modify the report, findings, and recommendations of the Medical Practice Committee or the Workmen's Compensation Board, or Committee of the County Medical Society from which such an appeal or review is taken.

5. In its discretion and in furtherance of justice, the Medical Appeals Unit may permit oral argument or receive additional evidence and testimony.

6. Where oral argument or the taking of additional evidence and testimony is directed, the Medical Appeals Unit shall fix a time and place for such hearing for the taking of testimony, and notice thereof by mail shall be given to the appellant or his attorney if there is an appearance by an attorney, and to the Medical Practice Committee or the Workmen's Compensation Board, or Committee of the

County Medical Society, whichever the case may be from whose findings and recommendation an appeal was taken.

7. In appeals where the Medical Appeals Unit permits oral argument or the taking of additional evidence or testimony, any one or all of the members of the Medical Appeals Unit may hold the hearing and receive such further oral argument and such further evidence and testimony as is deemed necessary. A stenographic record of such oral argument, testimony, and evidence shall be made and when transcribed shall be filed with and become part of the record of the case on appeal or review and thereupon the full Medical Appeals Unit shall make its decision and recommendation thereon.

8. In all its hearings and proceedings the Medical Appeals Unit shall not be bound by common law or statutory rules of evidence or by technical or formal rules of procedure but may make such investigation or inquiry or conduct such hearing in such manner as it deems advisable and necessary in the premises.

9. In arriving at a determination, a decision concurred in by two (2) of the three members of the Medical Appeals Unit shall be binding upon and constitute the decision of the Medical Appeals Unit.

10. Until final action is taken by the Industrial Commissioner on the findings and recommendations of the Medical Practice Committee, the Workmen's Compensation Board, or Committee of the County Medical Society or the Medical Appeals Unit of the Industrial Council, the appellant physician, medical bureau, or laboratory may continue in the practice of his profession or the conduct of the business of said bureau or laboratory under the Workmen's Compensation Law, unless otherwise directed by the Industrial Commissioner pursuant to §13-d of the Workmen's Compensation Law.

**Rules of Procedure on Arbitration of Medical Bills Under §§ 13-a (3) and 13-g of the New York Workmen's Compensation Law**

**Abbreviations:**

"Commissioner" refers to the Industrial Commissioner of the State of New York.

"Labor Department" refers to the Department of Labor of the State of New York.

"Medical Society" refers to the appropriate County Medical Society, unless the claimant physician is an osteopath, in which case "Medical Society" refers to the New York State Osteopathic Society, Inc.

"Carrier" refers to the employer or his insurer.

"Rating Board" refers to the Compensation Insurance Rating Board.

In cases where the claimant physician and carrier fail to agree as to the value of medical aid rendered under the Workmen's Compensation Law to an injured employee residing in a county having a population of one million or more, such value shall be decided by the Medical Practice Committee as provided in §13-g of said Law.

In cases where the claimant physician and carrier fail to agree as to the value of medical aid rendered under the aforesaid Law to an injured employee residing in a county having a population of less than one million the procedure as respects arbitration shall be as follows:

**PROCEDURE**

1. **Initiating arbitration.** On receipt of a medical bill which is regarded as unfair, notice of any ob-

jection thereto shall be given by the carrier in accordance with §13-g (1) within thirty days after receipt of the bill on a form approved for this purpose. The original is to be mailed to the Commissioner and copies thereof shall be sent to the claimant physician, Medical Society, and Rating Board. The copies to the claimant physician and Rating Board shall be accompanied by the Submission, as provided in Rule 5 herein. The notice shall briefly state all objections to the bill. In cases where there

tested by the carrier, by filing a request for such arbitration with the carrier, Medical Society, Rating Board, or Labor Department. Upon notification of the receipt of such request, the carrier shall promptly proceed in accordance with the requirements of Rule 5 herein.

An "authorized" physician claiming that a case has been as provided proved from copies thereof and carrier.

2. A copy of the bill shall be sent to the carrier, Medical Society, and Rating Board.

3. Selection of arbitrators. In accordance with §13-g (2) an arbitration committee shall comprise two physicians designated on behalf of the claimant physician by the President of the Medical Society, two physicians designated on behalf of the carrier by the Rating Board and one physician designated by the Commissioner. The carrier may name arbitrators of its own selection in any particular case, the nominations to be made through the Rating Board. The arbitrators designated by the Rating Board and the Commissioner shall be members of the Medical Society of the State of New York.

4. Notices relating to arbitration hearing. The Rating Board shall mail notice of the hearing containing the time and place thereof, with the names of the arbitrators which it has selected, at least eight days before the date of the hearing, to the carrier and the arbitrators selected by the Rating Board. The Medical Society shall mail like notice of the hearing together with the names of the arbitrators to the carrier.

Similar notice shall be sent to the arbitrator designated by the Commissioner.

5. Submission of formal agreements to arbitration required. The parties to arbitration shall sign a formal agreement, known as a "Submission," to submit the controversy to arbitration. The carrier shall show in the proper spaces on the Submission form the names of the parties, the sum in dispute

knowledge, and a copy of the notice of objection to medical bill for further action in arbitration.

6. Record of arbitration proceedings. The arbitrators shall be required to take the oath of office. The Rating Board shall appoint a recording clerk, qualified as a notary, who shall administer the oath and make a record of the proceedings on the pre-transcript of the

The claimant physician shall be required to pay a minimum arbitration fee which shall be subject to return as provided in Rule 9 of these rules. The claimant physician shall present his case, call his witnesses, present his proofs, and submit to questions

tive session, the arbitrators to be the only persons present at such session.

8. Forwarding arbitrators' decision or award. The decision or award shall be signed and acknowledged by the arbitrators. The original shall be mailed to the Labor Department and copies thereof shall be sent to the claimant physician, carrier, Medical Society, and Rating Board by the recording clerk.

9. Payment of award and arbitration fees. The award shall provide for payment as follows: The carrier shall draw two checks; one check for 95 per cent of the award payable to the order of the claimant physician, and the second check for 10 per cent of the award payable to the order of the Commissioner, the latter check to cover the carrier's share and claimant physician's share of the arbitration fee, provided, however, that if the carrier and claimant physician are each required to pay the minimum arbitration fee of \$2 00, the check to the claimant physician shall be for an amount equal to the award less \$2 00, the check to the Commissioner shall be for the sum of \$4 00, and the recording clerk shall return to the claimant physician the minimum arbitration fee of \$2 00 which was deposited by such physician at the time of the arbitration hearing. In the case where the claim is disallowed or where the award is for an amount less than \$2 00, the carrier shall mail its check for the minimum fee of \$2 00 to the Commissioner and the recording clerk shall

#### ARTICLE 1-A

##### Silicosis, and Other Dust Diseases

[This Article 4-A inserted by L. 1936, ch. 887, effective June 6, 1936]

and other dust diseases declared to be the policy in enacting this article,

2. The board of standards and appeals is hereby required to add to the industrial code, as provided in §§28 and 29 of the labor law, effective

dust hazard is present, of approved devices designed

the carrier. Such carrier shall then forward to the Rating Board the completely executed Submission together with a copy thereof excluding the



to eliminate such harmful dusts and to promulgate such other regulations as will effectively control the incidence of silicosis and similar diseases. [As amended by L. 1938, ch. 657.]

<sup>1</sup> Words "industrial commissioner and the industrial" stricken out by L. 1938, ch. 657.

<sup>2</sup> Words "of standards and appeals" inserted by L. 1938, ch. 657.

<sup>3</sup> Word "is" substituted for word "are" by L. 1938, ch. 657.

§66. Compensation payable for disability or death. Compensation shall not be payable for partial disability due to silicosis or other dust disease. In the event of temporary or permanent total disability or death from silicosis or other dust disease, notwithstanding any other provision of this chapter, compensation shall be payable under this article to employees in the employments enumerated in §3 of this chapter or to their dependents in the following manner and amounts: If disablement or death occur during <sup>1</sup>June, nineteen hundred thirty-six, not exceeding the sum of five hundred dollars; <sup>2</sup>thereafter the total of compensation and benefits payable for disability and death shall increase at the rate of fifty dollars each calendar month <sup>3</sup>until and including the month of December, nineteen hundred forty-three. The aggregate amount payable shall be determined by the total amount payable in the month in which disablement or death occurs. In no event shall such compensation exceed an aggregate total of <sup>4</sup>five thousand dollars <sup>5</sup>for temporary total disability and six thousand five hundred dollars for permanent total disability or death.

Compensation payable hereunder shall be paid from the eighth day following total disablement at the rate of sixty-six and two-thirds per centum of the average weekly wage to be computed under §14 of this chapter; but in no case shall compensation exceed twenty-five dollars per week nor in the event of total disability be less than eight dollars per week; provided, however, that in the event of death from such disease his dependents shall receive, in the manner provided by §§16 and 17 of this chapter, any balance remaining between the amounts paid for disability and the total compensation payable under this article.

Notwithstanding the provisions of §28 of this chapter, all claims for compensation resulting from inhalation of harmful dust, where the last exposure occurred between <sup>6</sup>September first, nineteen hundred thirty-five, <sup>7</sup>and June sixth, nineteen hundred thirty-six, shall be barred unless filed within one hundred and eighty days from <sup>8</sup>June sixth, nineteen hundred thirty-six. Liability in damages for disability or death due to any disease described in article 4-a of this chapter, in any case in which there was injurious exposure to the hazards of the disease prior to, and any exposure to such hazards subsequent to, September first, nineteen hundred thirty-five, shall be forever barred unless action therefor be begun within ninety days from the effective date of this act. <sup>9</sup>In addition to compensation herein provided, reasonable funeral expenses shall be paid as provided by Subdivision 1 of §16. [As amended by L. 1937, ch. 271; L. 1940, ch. 548; L. 1944, ch. 460.]

<sup>1</sup> Words "June, nineteen hundred and thirty-six" substituted for words "the first calendar month in which this act becomes effective" by L. 1940, ch. 548.

<sup>2</sup> Words "if disablement or death occur during the second calendar month after which this act becomes effective not exceeding the sum of five hundred and fifty dollars" stricken out by L. 1940, ch. 548.

<sup>3</sup> Words "until and . . . forty-three" inserted by L. 1940, ch. 548.

<sup>4</sup> Word "five" substituted for word "three" by L. 1940, ch. 548.

<sup>5</sup> Words "the effective date of this act and" stricken out by L. 1940, ch. 548.

<sup>6</sup> Words "and June sixth, nineteen hundred thirty-six" inserted by L. 1940, ch. 548.

<sup>7</sup> Words "June sixth . . . effective date of this act" inserted by L. 1940, ch. 548.

<sup>8</sup> Concluding sentence added by L. 1937, ch. 271.

<sup>9</sup> Words "for temporary . . . or death" inserted and sentence "The requirement as to payments into the special funds provided for in subdivisions eight and nine of section fifteen for each case of injury causing death in which there are no persons entitled to compensation shall not apply to any claim arising under this article" stricken out, by L. 1944, ch. 460.

§67. Liability of employer. An employer shall be liable for the payments prescribed by this article for silicosis or other dust disease when disability of an employee resulting in loss of earnings shall be due to an employment in a hazardous occupation in which he was employed, and such disability results within one year after the last injurious exposure in such employment; or, in case of death resulting from such exposure, if such death occurs within five years following continuous disability from such disease. The provisions of §44 of this chapter shall not apply to claims arising under this article.

The employer in whose employment the employee was last injuriously exposed in a hazardous occupation and the insurance carrier, if any, which was on the risk at the time of the last injurious exposure in such employment, shall be liable for any payments required by this article; the notice of injury and claim shall be made to such employer.

<sup>1</sup>Any exposure to the hazards of harmful dust in this state for a period of sixty days after September first, nineteen hundred thirty-five, shall be presumed, in the absence of substantial evidence to the contrary, to be an injurious exposure. [As amended by L. 1940, ch. 548.]

<sup>1</sup> This paragraph added by L. 1940, ch. 548.

§68. Medical treatment and <sup>1</sup>hospital care. Notwithstanding any other provisions of this chapter the medical treatment herein provided for <sup>2</sup>or, in lieu thereof, such hospitalization as the board may allow, shall be limited in the case of an employee disabled by an occupational disease due to or resulting from the inhalation of harmful dust to a period of ninety days <sup>3</sup>from the date of such disablement, but the requirement for such medical treatment <sup>4</sup>or hospitalization may be extended for an additional period, <sup>5</sup>not necessarily continuous, not to exceed <sup>6</sup>three hundred and sixty days upon the order of the industrial board.

<sup>7</sup>In determining the medical treatment, hospitalization, and other care required beyond the period of ninety days from the date of disablement, the board shall consider the recommendations contained in the report submitted by the committee of expert consultants as required under the provisions of section seventy-one of this chapter.

Copies of the order of the board directing the claimant as to the proper type of treatment, hospitalization, and other care to be secured shall be sent to all parties in interest and also to the attending physician and medical director of any hospital, sanatorium, or other place in which the treatment or care is being given. No claim for such treatment or care not in accordance with the requirements of the order of the board shall be valid and enforceable for any period more than five days after such notice of direction and report shall have been sent. [As amended by L. 1939, ch. 676; L. 1940, ch. 548.]

\* Word "hospital" inserted by L. 1939, ch. 676

\* Words "or, in lieu . . . may allow" inserted by L. 1939,

erted by L. 1939,

L. 1939, ch. 670.

erted by L. 1939,

ch. 678.

\* Words "three hundred and sixty" substituted for words "one hundred and eighty" by L. 1940, ch. 548, words "one hundred and eighty" had been substituted for word "ninety" by L. 1939, ch. 676.

\* Remainder of this section added by L. 1940, ch. 548

§69 Workers, when not entitled. If an employee, at the time of his employment, falsely represented in writing that he has not previously been disabled from the disease which is the cause of disability or death or has not received compensation or benefits under this article, no compensation shall be payable

§70 Special medical examiners. The industrial commissioner shall divide the state into five districts and in each district may appoint two or more special medical examiners who shall be licensed physicians in good professional standing, each of whom shall have had, at the time of his appointment, and immediately prior thereto, at least five years of practice in the diagnosis, care, and treatment of pulmonary diseases. Such examiners shall be employed on a per diem basis as the exigencies of the work may require. Fees of examiners shall be fixed by the industrial commissioner within the limits of the appropriation therefor. Each position of special medical examiner provided herein shall be in the exempt class of civil service.

Whenever a claim is made under this article and an examination of the claimant by an impartial physician is desired by any party in interest, the industrial commissioner shall order such medical examiners to make the necessary medical and x-ray examination of the claimant in an effort to obtain the medical facts in an impartial manner.

For the purposes of adjudication under this chapter, the industrial board shall adopt rules of practice and procedure and shall prescribe methods and standards under which physical examinations, x-rays, and other studies shall be conducted.

§71. Expert consultants. The industrial commissioner shall appoint as a committee of expert consultants on dust diseases three licensed physicians in good professional standing, each of whom shall have had, at the time of his appointment, and immediately prior thereto, at least ten years of practice in the diagnosis, care, and treatment of diseases of the pulmonary tract, along with interpretation of x-ray films thereof. One of such consultants shall be the commissioner. The commissioner shall be paid a salary of \_\_\_\_\_ dollars per year. \_\_\_\_\_ shall be in the \_\_\_\_\_

\_\_\_\_\_ filing of a claim for compensation hereunder, or notice thereof, the commissioner shall direct an examination of the claimant by the committee of expert consultants, or one of them, including such x-ray and other pathological examinations and tests as in their opinion may be \_\_\_\_\_ diagnosis \_\_\_\_\_ employment, and \_\_\_\_\_ treatment, hospitalization, and other care required. In \_\_\_\_\_ and report of \_\_\_\_\_ expert consultants \_\_\_\_\_ and report of the \_\_\_\_\_

committee. In the event that the claim is controverted upon any medical ground, the report shall be made by the full committee after a physical examination by at least one such expert consultant. The findings and opinions of a majority of the committee of expert consultants shall constitute the findings and opinion of the committee. The contents of such report of the committee of expert consultants introduced in evidence shall constitute prima facie evidence of fact as to the matter contained therein, and any of the makers of such report shall be subject to examination upon demand.

Copies of the report shall be sent to all parties in interest and also to the attending physician and medical director of any hospital, sanatorium, or

physician or medical director of any hospital or sanatorium or other place in which treatment or care provided for by this section is being given, to attend at such time or place as may be reasonably convenient, to consult with such expert consultants, or any of them, and to describe the nature and type of care or treatment being rendered, and for such attendance shall be entitled to receive a fee from the employer, or carrier, in an amount to be fixed by the commissioner in addition to any fee payable under §120.

In the event of a claim for death benefits, the committee of expert consultants upon their own initiative or upon the order of the commissioner or the board shall examine all available evidence pertaining to such claim, including medical and hospital records, x-rays and other reports made during the lifetime of the deceased, including the findings of any autopsy, and shall render its findings and report thereon.

The industrial commissioner or the industrial board shall on their own volition or on the application of either an employee, an employer, or an insurance carrier, direct such expert consultants to make examinations of claimants, to review the findings of special medical examiners, to read and review the files of compensation cases when necessary, and to inform the industrial commissioner and the industrial board of their opinion as to their findings in such cases. [As amended by L. 1940, ch. 548.]

\* Such committee of expert consultants shall as soon as practicable and at the direction of the indus-

tion for partial disability and other full benefits under this chapter in such cases. [As amended by L. 1940, ch. 548, L. 1944, ch. 460.]

\* Words "a committee of" inserted by L. 1940, ch. 548

\* Following sentence inserted by L. 1940, ch. 548.

\* Word "each" inserted by L. 1940, ch. 548

\* Word "at" eliminated by L. 1940, ch. 548

\* Words "to be fixed by the industrial commissioner not to exceed" stricken out and word "of" inserted by L. 1940, ch. 548.

\* Following four paragraphs inserted by L. 1940, ch. 548.

\* Final paragraph added by L. 1944, ch. 460

§72 Alternative remedy. The liability of an employer prescribed by this article shall be exclusive and in place of any other liability whatsoever, at common law or otherwise, to such employee, his personal representatives, husband, parents, de-

pendents, or next of kin, or anyone otherwise entitled to recover damages, at common law, or otherwise on account of any injury, disability, or death, caused by the inhalation of harmful dust, except that if an employer fail to secure the payment of compensation for his injured employees and their dependents as provided in §50 of this chapter, an injured employee, or his legal representative in case death results from the injury or disease, may, at his option, elect to claim compensation under this chapter, or to maintain an action in the courts for damages on account of such injury or disease; and in such an action it shall not be necessary to plead or prove freedom from contributory negligence nor may the defendant plead as a defense that the injury or disease was caused by the negligence of a fellow servant or that the employee assumed the risk of his employment, nor that the injury or disease was due to the contributory negligence of the employee.

*Re exclusiveness of remedy, see Del Busto v. Dupont de Nemours & Co., 167 Misc. 920; 259 App. Div. 1070; 204 S.B. 543.*

### EDUCATION LAW

§1264. Revocation of certificates; annulment of registrations . . . . .

2. The license or registration of a practitioner of medicine may be revoked, suspended, or annulled or such practitioner reprimanded or disciplined in accordance with the provisions and procedure of this article upon decision after due hearing in any of the following cases: . . . . .

(f) That a physician has directly or indirectly requested, received, or participated in the division, transference, assignment, rebate, splitting, or refunding of a fee for, or has directly or indirectly requested, received, or profited by means of a credit or other valuable consideration as a commission,

discount, or gratuity in connection with the furnishing of medical, surgical, or dental care, diagnosis or treatment or service, including x-ray examination and treatment, or for or in connection with the sale, rental, supplying, or furnishing of clinical laboratory services or supplies, x-ray laboratory services or supplies, inhalation therapy service or equipment, ambulance service, hospital or medical supplies, physiotherapy or other therapeutic service or equipment, artificial limbs, teeth, or eyes, orthopaedic or surgical appliances or supplies, optical appliances, supplies or equipment, devices for aid of hearing, drugs, medication, or medical supplies, or any other goods, services, or supplies prescribed for medical diagnosis, care, or treatment under this chapter, except payment, not to exceed thirty-three and one-third per centum of any fee received for x-ray examination, diagnosis, or treatment, to any hospital furnishing facilities for such examination, diagnosis, or treatment. [This Paragraph (f) added by L. 1944, ch. 466.]

For effect of fee splitting, etc., on authorization of physicians to treat injured workmen under the Workmen's Compensation Law, see §13-d, Subdivision 2, of such Law.

### INSURANCE LAW

§40. Insurer's license required; issuance, revocation of license . . . . .

8. The superintendent may impose a penalty of not to exceed twenty-five hundred dollars upon any insurer required to be licensed under the provisions of this chapter, if, after notice to and a hearing of such insurer, he shall find that such insurer has unreasonably failed to comply with requirements imposed by the workmen's compensation law. The action of the superintendent shall be subject to judicial review. [This Paragraph 8 added by L. 1944, ch. 470.]

*It is suggested that physicians interested in Workmen's Compensation cut out and bind pages 2724-2740 for future reference.*

### NURSE SHORTAGE IN SERVICES IS CRITICAL

As a result of a critical shortage of nurses in the U.S. Army, the War Manpower Commission Procurement and Assignment Service has sent telegrams to all state procurement and assignment committees requesting that additional names of nurses be made available to the American Red Cross for recruitment purposes, Paul V. McNutt, WMC Chairman, announced on November 22.

Stating that he had been informed that 10,000 nurses must be recruited for the Army immediately in order to care adequately for wounded and sick soldiers overseas and at home, Mr. McNutt said the committees have been asked to cooperate with Nursing Councils for War Service in meetings of nurses in twenty-five of the country's larger cities, at which the seriousness of the Army's nursing needs will be explained.

Mr. McNutt said that he had been informed by Maj. Gen. Norman T. Kirk, Surgeon General of the Army, that the Army's need for more nurses has been heightened by the activation during November of hospitals it had not been expected to

organize before next March. This is because, he was informed, of the activity on all war fronts and the ever increasing number of battle casualties.

The Veterans Administration, Mr. McNutt said, is also experiencing a serious need for additional nurses. About 1,000 additional nurses are urgently required to care for the growing number of servicemen in Veterans Administration hospitals.

The Navy, Mr. McNutt said, will continue to need about 500 nurses a month for several more months.

"Our nurses who have already responded to the needs of the services are doing a splendid job, but many more than are at present enrolled are needed. I would like to see every nurse who has been declared available for military service respond to this call. I would also like to see every young nurse now graduating who can do so offer her services."

WMC pointed out that nurses who enter the services are commissioned, and at the end of the service will enjoy all rights extended to the armed forces under the G. I. Bill of Rights.

# Postgraduate Medical Education

Programs arranged by the Council Committee on Public Health and Education of the Medical Society of the State of New York are published in this section of the JOURNAL. The members of the committee are Oliver W. H. Mitchell, M.D., Chairman (423 Greenwood Place, Syracuse); George Bucher, M.D., and Charles D. Post, M.D.

## Saranac Lake Medical Society Has Two Postgraduate Sessions

THE Saranac Lake Medical Society met on December 6, 1944, at 8:00 P.M. in the John Black Room of the Saranac Laboratory, Saranac Lake, for a lecture entitled "Distases of the Biliary Tract," by Dr. Julian Rose, instructor in medicine at Long Island College of Medicine.

On December 20, 8:00 P.M., the society met again in the John Black Room of Saranac Labora-

... medicine  
... Columbia  
... and Treat-

... cooperative  
... endeavor between the Medical Society of the State of New York and the New York State Department of Health

## "Penicillin Therapy"

THE medical staff of Veterans' Memorial Hospital, Ellenville, met on December 5 at 9:00 P.M. at the Wayside Inn in Ellenville, for postgraduate instruction. A lecture, "Penicillin Therapy," was delivered by Dr. R. C. Arnold, Surgeon, U.S. Public Health Service, Venereal Disease Re-

search Laboratory, U.S. Marine Hospital, Staten Island.

This instruction was provided by the Medical Society of the State of New York with the cooperation of the New York State Department of Health

## Jaundice

POSTGRADUATE instruction in general medicine was given to the Jefferson County Medical Society on December 14 at 6:30 P.M. at the Black

River Valley Club, Watertown. Dr. William F. Lipp, assistant in medicine, University of Buffalo School of Medicine, spoke on "The Treatment of Jaundice"

## MANHATTAN HOSPITALS SET \$12,000,000 AS WAR LOAN GOAL

Manhattan's thirty-three voluntary hospitals have set a Sixth War Loan quota of \$12,000,000, with the majority of hospitals sighting their bond sales at the purchase of fleets of field ambulances and ambulance planes, it has been reported by John McCormack and Mrs. Donald B. Woodward, co-chairmen, hospital division of the War Finance Committee for New York.

of the faculty of the New York Medical College are joining in the selling with bond talks to the Army and Navy doctors who are their students.

Many of the voluntary hospitals' war bond committees are headed by women, a large number of whom are wives of attending physicians. Among these women is Mrs. Charles B. Halsey at Post Graduate Hospital, now a first lieutenant in the Blue Star Brigade. Post-Graduate's bond quota is \$413,000, the cost of a BPM Mariner Patrol Bomber, a naval hospital plane.

Other hospitals which have selected "mercy" goals for the Sixth War Loan are: St. Luke's, \$250,000, for two ambulance planes, Jewish Memorial, \$413,000, for a BPM Mariner Patrol Bomber; Hospital for Joint Diseases, \$125,000, for an ambulance plane, St. Vincent's, \$125,000, for an ambulance plane, N.Y. Orthopaedic, \$125,000, for an ambulance plane; St. Elizabeth's, \$125,000, for an ambulance plane, Memorial Hospital, \$125,000, for an ambulance plane; Downtown, \$125,000, for an ambulance plane, Knickerbocker, \$18,750, for a fleet of twenty-five field ambulances; French, \$18,750, for a fleet of twenty-five field ambulances, Manhattan Eye, Ear and Throat, \$68,250, for thirty-five field ambulances.

The nurses of Beth Israel Hospital are particularly active in the Blue Star Brigade, and already have in their ranks three lieutenant colonels, one major, and three captains, who have helped sell the start of the marked for pur-

... been assumed  
... Sinai, \$150,000,  
... \$78,000, N.Y.  
... \$50,000; Syden-  
... ham, \$165,000; Woman's, \$20,000; Hospital for  
... Special Surgery, \$29,250; Misericordia, \$25,000

... sales figure,  
... hospitals, where  
... ambulance plane  
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# Medical News

## A.M.A. Meeting Transferred to Philadelphia

THE Ninety-Fifth Annual Session of the American Medical Association will be held in Philadelphia June 18 to 22, 1945. This session was originally scheduled to be held in New York June 11 to 15, but because of untoward conditions growing out of the war emergency it was found that needed facilities would not be available in that city.

A very cordial invitation has been extended to the Association by the Philadelphia County Medical Society to hold the 1945 session in that city. The Philadelphia Convention and Tourists Bureau, the Hotel Association, those concerned with the operation of transportation facilities and other civic groups have given assurances that everything possible will be done to contribute to the success of a meeting in Philadelphia. Final arrangements are being made as rapidly as possible.

Hotel reservations will be made through a central office in Philadelphia. It is highly desirable that reservations be made as early as possible. Those who expect to attend the Philadelphia session are

urgently requested to refrain from making reservations in more than one hotel. In numerous instances at the annual session held in Chicago in 1944, and at other sessions previously held, individual physicians have made reservations at two or three hotels and on arrival at the place of meeting have completed their reservations at one hotel and failed to cancel other reservations. The result has been that many physicians have found it impossible to secure accommodations. If this practice is persisted in it will become increasingly difficult for the Association to find a satisfactory place of meeting.

At the Chicago session several hotels had a large number of reservations which they had made in good faith only to find that multiple reservations made by individuals, which were not needed, were not canceled, and the result was that the hotels had vacant accommodations, which after a short time were given over to persons who were not concerned with the annual session of the American Medical Association.—J.A.M.A., Nov. 25, 1944

## Baruch Committee Makes New Grants for Physical Medicine

THE Administrative Board of the Baruch Committee on Physical Medicine has announced the granting of an additional total sum of \$185,000, which is being given by Mr. Bernard M. Baruch for the advancement of the program in physical medicine and the rehabilitation of the war-disabled.

This sum has been divided into seven grants, as follows: \$50,000 to the Massachusetts Institute of Technology, Cambridge, Massachusetts; \$40,000 to the Medical School of the University of Minnesota, Minneapolis; \$30,000 to the Medical School of Harvard University, Boston; \$30,000 to the Medical School of the University of Southern California, Los Angeles; \$15,000 to the Medical School of the University of Iowa, Iowa City; \$15,000 to the Medical School of the University of Illinois, Chicago; \$5,000 to Marquette University Medical School, Milwaukee, Wisconsin.

The grants to the Massachusetts Institute of Technology and the University of Minnesota are in addition to the gift of \$1,100,000 made by Mr. Baruch in April, 1944, at which time grants were made to Columbia University's College of Physicians and Surgeons, New York University College of Medicine, the Medical College of Virginia, and for minor research and fellowship programs for the advancement of physical medicine.

The present grant to the Massachusetts Institute of Technology is in support of a five-year program of training and research in electronics, instrumentation, and physics in relation to medicine, to be carried on under the auspices of the Department of Biology and Biological Engineering. Dr. Frank H. Krusen, director of the Baruch Committee, said that Mr. Baruch is particularly interested in the field of electronics as applied to medicine.

## Pay Allowances for Women Medical Officers

LEGISLATION under which women officers of the Army Medical Corps will be entitled to receive the same pay allowances for their dependents as are paid to all other commissioned personnel of the Army became effective on October 1.

An act authorizing the commissioning of women physicians in the Medical Corps was approved in April, 1943, and provided that they should "receive the same pay and allowances and be entitled to the same rights, privileges, and benefits as members of the Officers Reserve Corps of the Army." The

Comptroller General subsequently ruled that they were not entitled to allowances for dependents.

The new law, designed to meet the Comptroller General's objections, is not retroactive to the date of women officers' commissions. The dependents for whom allowances may be paid are "husband, a child or children, or a parent or parents in fact dependent" upon the officer "for their chief support."

Approximately seventy-five women have been commissioned to date in the Medical Corps.—Release, Office of the Surgeon General, Nov. 16, 1944

## General Simmons Honored by American Society of Tropical Medicine

AT THE annual meeting of the American Society of Tropical Medicine in St. Louis, Brig. Gen. James S. Simmons, USA, Chief of the Preventive Medicine Service, was presented (November 15) with the Walter Reed Medal. This medal, "cast

in bronze," was established by the Society in 1934, to be awarded periodically to an individual or an institution in recognition of meritorious achievement in tropical medicine.—Release from the Office of the Surgeon General, Nov. 16, 1944

## Major Lyons Receives Legion of Merit for Penicillin Research

MAJOR Champ Lyons, MC, of West Newton,

and limbs of soldiers have been saved, and the dis-

perience in practical surgery, has cast new light on the age-old problem of wound surgery. At no time has he spared himself mentally or physically, and the example he has set is an inspiration to all surgeons in the service "

ylvania. He where he received entered the or in 1943 — Nov 16, 1944

## County News

### Albany County

Dr. Clay, and Treatment of the College of Pharmacy, of the paper was opened by Drs John W. Ghormley, Thomas J. O'Donnell, and F. W. Dodge.

Dr. Murray is associate professor of surgery, College of Physicians and Surgeons, Columbia University, and associate attending surgeon, Presbyterian Hospital, New York City.

A meeting of the Eastern New York Eye, Ear, Nose, and Throat Society was held in the University Club in Albany on November 2

Dr. Edward J. Whalen, Hartford, Connecticut, spoke on the use of sulfa drugs in the treatment of nasal sinus disease.

The general topic of sinus disease was reviewed by Dr. John J. Ranney, who acted as discussion master. Dr. Daniel Cuning, New York specialist and formerly of Albany, discussed the topic from the medical viewpoint, and Dr. Crawford R. Green, Troy, spoke from the view point of the general practitioner.\*

In an address before members of the American Legion Auxiliary in Albany on November 16, Dr. Robert E. Plunkett, general superintendent of tuberculosis hospitals of the State Health Department, urged the establishment of free tuberculosis treatment in New York State hospitals \*

### Erie County

A Kenmore attorney, Joseph J. Guariglia, will aid the Medical Society of the County of Erie in enforcing the medical provisions of the Workmen's Compensation Law, a duty with which the society is charged by law. The appointment of Mr. Guariglia as secretary to the society's compensation board was voted unanimously by the committee of the society.\*

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body which shall be able to represent officially the organized medical profession of the entire city in matters of city-wide interest.

\* Asterisk indicates that item is from a local newspaper

Discussion of this proposal appeared in the November 18 issue of *Journal of the Medical Society of the County of New York*.

### Greene County

At the annual meeting of the Medical Society of the County of Greene held on October 26 the following officers were elected:

president, Dr. L. G. Mulbury; vice-president, Dr. Frances P. Wiese; secretary, Dr. W. M. Rapp; treasurer, Dr. M. H. Atkinson; and delegate to the State Society, Dr. K. F. Bott.

### Kings County

A stated meeting of the county society was held in MacNaughton Auditorium on November 21 at 8:45 P. M.

A special feature of the program was the presentation to the society of a portrait of the late Dr. Henry Joachim. Dr. Milton G. Wasch made the presentation and the gift was accepted by Dr. Merrill N. Foote on behalf of the society.

Two papers on proctology were read—"The Present Status of Caudal Anesthesia in Proctology," by Dr. Louis Hirschman, professor of proctology at Wayne Michigan in Recta ! professor of Medicine, Brooklyn

Dr. Frederick E. Elliott spoke on "United Medical Service, Inc."

The nominating committee announced the candidates for office for 1945.

His Holiness, Pope Pius XII, has conferred upon two physicians of the Diocese of Brooklyn the Papal Honor of Knight of St. Gregory the Great. They are Drs. Thomas M. Brennan and Thomas A. McGoldrick.

Dr. Brennan, a native of Brooklyn, is chairman of the Board of Trustees and of the Publication Committee of the Medical Society of the State of New York, as well as a member of the Council of that of the staff of St. the medical board

of Brooklyn, is a past president of the State Medical Society and a former chief surgeon of the City Police Department. For over forty years he has served on the staff of St. Peter's Hospital, Brooklyn. He is director of

medicine at St. Anthony's Hospital, Woodhaven, and Welfare Hospital, Welfare Island.

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The forty-seventh annual meeting of the Associated Physicians of Long Island will be held at St. John's Hospital, Brooklyn, on Saturday, January 27, 1945.

The morning program will consist of clinics. The scientific session, at 2:30 P.M., will consist of six ten-minute papers with discussions on diversified subjects. The annual dinner will take place at 6:30 P.M. at the Brooklyn Club.

. . .

Mr. Charles Frankenburger, librarian for the county society, gave his annual course of lectures on medical literature and bibliography to the first-year class of the Long Island College of Medicine from November 10 through December 8. The lectures were illustrated with lantern slides. Members of the county society were invited to attend.

. . .

Dr. Jean A. Curran, president of the Long Island College of Medicine, outlined a proposed plan for expansion of the college's plant and research facilities at a dinner which launched the fall program of the College's second annual Development Fund.

He said that the expansion will be made possible through the fund drive, in which \$100,000 is sought. Dr. Nathaniel P. Rathbun, chairman of the Fund, presided at the dinner, which was attended by more than seventy-five parents of second-year students.

Dr. William Dock, professor of medicine, explained that communities which have hospitals connected with medical schools are the first to obtain new therapeutic agents for the care of diseases.

Appeals to industry in Brooklyn will be made by the Business Interests Division, and the Women's Division will canvass the organized women's club during the fall and winter. Parents' groups started their activities last spring with meetings in all five boroughs.\*

#### Lewis County

Officers and committees of the county society for the year 1945 are: president, Dr. Harry E. Chapin, Lowville; vice-president, Dr. Bruce M. Phelps, Lowville; secretary-treasurer, Dr. Joseph F. Rudmin, Port Leyden; delegate to the State Society, Dr. Edgar O. Boggs, Lowville; alternate delegate, Dr. Thomas A. Lynch, Lowville; censors: Dr. David J. O'Connor, Croghan, Dr. Phelps, Dr. Chapin; committee on legislation: Dr. Lynch, *chairman*, Dr. Boggs, Dr. Reginald D. Gerrard, Lowville; committee on public health and education: Dr. Phelps, *chairman*, Dr. Rudmin, Dr. Gregori O. Volovic, Lowville; subcommittee on industrial health: Dr. Boggs, Dr. O'Connor; committee on school health: Dr. Lynch, Dr. Paul H. von Zierolshofen, Croghan; committee on tuberculosis: Dr. Volovic, Dr. H. J. Stenger, Lyons Falls; committee on workmen's compensation: Dr. Chapin, *chairman*, Dr. Rudmin, Dr. Boggs; committee on grievance (workmen's compensation): Dr. Chapin and Dr. Boggs.

#### Monroe County

Dr. Edward G. Whipple, Rochester, has been named one of three special consultants to the State

Department of Labor on dust diseases, especially silicosis.

The commission was established by the State Legislature several years ago after an outbreak of silicosis in industry.

Dr. Whipple came to Rochester in 1911 as executive secretary and medical director of the Rochester Public Health Association. He served in that capacity until 1916, when he began to practice general medicine. In World War I he was a captain in the Medical Corps.

He has served on the staffs of Strong Memorial Hospital, where he is a consultant in medicine, Genesee, Highland, and Rochester General, and is a consultant in medicine at the County Hospital.\*

#### Nassau County

At the regular monthly meeting of the county society, held on November 28 at 9:00 P.M. in Mercy Hospital Auditorium, Dr. Alexander O. Gettler, professor of chemistry and toxicology at New York University, toxicologist to the Chief Medical Examiner's Office, New York City, and consulting toxicologist to the Department of Hospitals, New York City, spoke on "Toxicological Problems in a General Hospital."

. . .

Dr. William H. Ross, of Brentwood, discussed the hazards of socialized medicine at a meeting of the Bay Shore Library Club on November 6.

#### New York County

Prejudice against women doctors is rapidly diminishing, but if it is to disappear altogether "all women in medicine must now regard themselves as doctors, not as women doctors, and must have the courage to accept equality," Dr. Donal Sheehan, acting Dean of the New York University College of Medicine, declared on November 14 at a dinner of the Women's Medical Association of New York City. One hundred doctors, students, and professors of medical colleges attended the meeting, which was held at the Cosmopolitan Club.

Dr. Joseph Hinsey, Dean of Cornell University Medical College, Dr. Jean Curran, president and Dean of Long Island College of Medicine, Miss C. Mildred Thompson, Dean of Vassar College, and Miss Charlotte Anne Keefe of the Dalton School participated in a forum discussion on the future of medical education and the part women will play in medicine after the war.\*

. . .

Dr. Henry E. Meloney, professor of preventive medicine, New York University College of Medicine, has been appointed representative from the American Society of Tropical Medicine to the division of medical sciences of the National Research Council.

. . .

In his annual report to Nicholas Murray Butler, President of Columbia University, Dr. Willard C. Rappleye, Dean of the College of Physicians and Surgeons, calls attention to new demands which he foresees will be placed upon medicine as a result of the war. War casualties will be such as to require immediate planning for better training and development of special skills in all fields of medicine, Dr. Rappleye believes.

"It is generally agreed that tropical diseases constitute one of the major problems of the war," Dr.

Rappleye stated. "The widespread incidence of these disorders among the armed forces and the probability of their increasing among civilians after the war through commercial contacts, shipping, and travel, are fully recognized." Dr. Rappleye also called attention to the new methods now being developed for the care of arthritis and other joint diseases.

Dr. Joseph D. Kelly, of the Manhattan Eye, Ear, and Throat Hospital, has been appointed professor and chairman of the ophthalmology at the New York City School of Medicine, Washington, D. C., in 1942.

A new pamphlet on "Child Care and Development" has been issued by the Community Service Society of New York. It sets up for each age, beginning at birth and carrying on to 5 years, certain developmental signs for the child, such as height, weight, diet, sleep, physical development, and recommended practices. The pamphlet is one of the most useful documents that a physician can make available to a nurse or to members of the family. As a public service the pamphlet is sold at 10 cents plus postage on orders for one to one hundred, and 8 cents plus postage on orders over one hundred.

On October 12 a dinner was given at the Waldorf-Astoria in honor of Dr. Abraham A. Brill, lecturer in psychoanalysis and psychosexuality, Columbia University, to celebrate his seventieth birthday. Dr. Louis Casamajor was toastmaster, and speakers were Dr. Leonard Woodburn, who had been raised amounting to about \$6,000, with which he intends to endow a library. It was also announced that a library in the new building of the New York Psychoanalytic Institute will be named in honor of Dr. Brill.

A memorial meeting was held at Columbia University by the Polish Institute of Arts and Sciences in America, October 20, to mark the tenth anniversary of the death of Marie Sklodowska Curie. Six departments of the university, including chemistry, chemical engineering, East European languages, medicine, physics, and radiology, participated. Among the speakers were W. A. Swietoslawski, E. E. Me, president of the who spoke on Kasimir Fajan, Arbor, a member of the Modern Development of Chemistry and Physics.

#### Oneida County

The November meeting of the Utica Academy of Medicine was held on November 16 at the Hotel Utica, with Dr. Ward J. MacNeal, director of laboratories at New York Post-Graduate Medical School,

as the main speaker. The title of Dr. MacNeal's address was "Blood Stream Infection and Endocarditis." Discussion was opened by Lt. Col. Howard P. Lewis, of Rhoads Hospital, Dr. Edwin P. Russell, and Dr. Robert W. Hurd.

Other features of the program were the "Overseas Mail Bag" and "The Campaign in Italy" by Lt. Col. Walter Pugh. The program was preceded by a dinner at 7:00 p. m.

Dr. Newton J. T. Bigelow, Deputy Commissioner, New York State Department of Mental Hygiene, addressed the Utica Council of Social Agencies on October 24. His topic was "The Child Guidance Clinic's Value to the Community."

#### Ontario County

Capt. John A. Crowther, of Honeyoye, who has just returned after twenty-one months in the South Pacific, gave an informal talk on November 3 at the monthly meeting of the Canandigua Medical Society in the home of Dr. Malcolm R. Blakeslee, Shortsville. He told of Army life in the tropics, of his varied experiences, and answered many questions.

Besides Dr. Crowther, guests were Dr. Frederick C. Robbins, Brigham Hall, and Dr. William C. Eakner, Chifton Springs. Dinner preceded the program.

#### Putnam County

Sandor Rado, M.D., clinical professor of psychiatry, College of Physicians and Surgeons, Columbia University, was the guest speaker at the . . . el, New York, . . . Dr. Rado's . . . from the Point

The officers for the year 1944-1945 are as follows: president, Dr. George H. Steacy, Lake Mahopac; vice-president, Dr. Frank C. Genovese, Patterson; and secretary-treasurer, Dr. Garrett W. Vink, Carmel.

#### Quecas County

##### Hills Inn

The presentation was made by Dr. L. Howard Moss, a member of the medical board and of the board of trustees of Jamaica Hospital, where Dr. Neal was . . . and . . .

was arranged by Dr. Neal's friends and colleagues at the hospital. Thomas D. Austin, trustee, was the toastmaster, and speakers included Clarence A. Ludlum, chairman of the board, Dr. Edward J. Buxbaum, Dr. A. A. de Poto, and Francis C. Leu-

which he

Among the guests was a delegation from the Medical Jurisprudence Association of New York, of which Dr. Neal is a member. Two physicians who were graduated with Dr. Neal in the class of 1905



medicine at St. Anthony's Hospital, Woodhaven, and Welfare Hospital, Welfare Island.

. . .

The forty-seventh annual meeting of the Associated Physicians of Long Island will be held at St. John's Hospital, Brooklyn, on Saturday, January 27, 1945.

The morning program will consist of clinics. The scientific session, at 2:30 p.m., will consist of six ten-minute papers with discussions on diversified subjects. The annual dinner will take place at 6:30 p.m. at the Brooklyn Club.

. . .

Mr. Charles Frankenburger, librarian for the county society, gave his annual course of lectures on medical literature and bibliography to the first-year class of the Long Island College of Medicine from November 10 through December 8. The lectures were illustrated with lantern slides. Members of the county society were invited to attend.

. . .

Dr. Jean A. Curran, president of the Long Island College of Medicine, outlined a proposed plan for expansion of the college's plant and research facilities at a dinner which launched the fall program of the College's second annual Development Fund.

He said that the expansion will be made possible through the fund drive, in which \$100,000 is sought. Dr. Nathaniel P. Rathbun, chairman of the Fund, presided at the dinner, which was attended by more than seventy-five parents of second-year students.

Dr. William Dock, professor of medicine, explained that communities which have hospitals connected with medical schools are the first to obtain new therapeutic agents for the care of diseases.

Appeals to industry in Brooklyn will be made by the Business Interests Division, and the Women's Division will canvass the organized women's club during the fall and winter. Parents' groups started their activities last spring with meetings in all five boroughs.\*

#### Lewis County

Officers and committees of the county society for the year 1945 are: president, Dr. Harry E. Chapin, Lowville; vice-president, Dr. Bruce M. Phelps, Lowville; secretary-treasurer, Dr. Joseph F. Rudmin, Port Leyden; delegate to the State Society, Dr. Edgar O. Boggs, Lowville; alternate delegate, Dr. Thomas A. Lynch, Lowville; censors: Dr. David J. O'Connor, Croghan, Dr. Phelps, Dr. Chapin; committee on legislation: Dr. Lynch, *chairman*, Dr. Boggs, Dr. Reginald D. Gerrard, Lowville; committee on public health and education: Dr. Phelps, *chairman*, Dr. Rudmin, Dr. Gregori O. Volovic, Lowville; subcommittee on industrial health: Dr. Boggs, Dr. O'Connor; committee on school health: Dr. Lynch, Dr. Paul H. von Zierolshofen, Croghan; committee on tuberculosis: Dr. Volovic, Dr. H. J. Stenger, Lyons Falls; committee on workmen's compensation: Dr. Chapin, *chairman*, Dr. Rudmin, Dr. Boggs; committee on grievance (workmen's compensation): Dr. Chapin and Dr. Boggs.

#### Monroe County

Dr. Edward G. Whipple, Rochester, has been named one of three special consultants to the State

Department of Labor on dust diseases, especially silicosis.

The commission was established by the State Legislature several years ago after an outbreak of silicosis in industry.

Dr. Whipple came to Rochester in 1911 as executive secretary and medical director of the Rochester Public Health Association. He served in that capacity until 1916, when he began to practice general medicine. In World War I he was a captain in the Medical Corps.

He has served on the staffs of Strong Memorial Hospital, where he is a consultant in medicine, Genesee, Highland, and Rochester General, and is a consultant in medicine at the County Hospital.\*

#### Nassau County

At the regular monthly meeting of the county society, held on November 28 at 9:00 p.m. in Mercy Hospital Auditorium, Dr. Alexander O. Gettler, professor of chemistry and toxicology at New York University, toxicologist to the Chief Medical Examiner's Office, New York City, and consulting toxicologist to the Department of Hospitals, New York City, spoke on "Toxicological Problems in a General Hospital."

. . .

Dr. William H. Ross, of Brentwood, discussed the hazards of socialized medicine at a meeting of the Bay Shore Library Club on November 6.

#### New York County

Prejudice against women doctors is rapidly diminishing, but if it is to disappear altogether "all women in medicine must now regard themselves as doctors, not as women doctors, and must have the courage to accept equality," Dr. Donal Sheehan, acting Dean of the New York University College of Medicine, declared on November 14 at a dinner of the Women's Medical Association of New York City. One hundred doctors, students, and professors of medical colleges attended the meeting, which was held at the Cosmopolitan Club.

Dr. Joseph Hinsey, Dean of Cornell University Medical College, Dr. Jean Curran, president and Dean of Long Island College of Medicine, Miss C. Mildred Thompson, Dean of Vassar College, and Miss Charlotte Anne Keefe of the Dalton School participated in a forum discussion on the future of medical education and the part women will play in medicine after the war.\*

. . .

Dr. Henry E. Meleney, professor of preventive medicine, New York University College of Medicine, has been appointed representative from the American Society of Tropical Medicine to the division of medical sciences of the National Research Council.

. . .

In his annual report to Nicholas Murray Butler, President of Columbia University, Dr. Willard C. Rappleye, Dean of the College of Physicians and Surgeons, calls attention to new demands which he foresees will be placed upon medicine as a result of the war. War casualties will be such as to require immediate planning for better training and development of special skills in all fields of medicine, Dr. Rappleye believes.

"It is generally agreed that tropical diseases constitute one of the major problems of the war," Dr.

## Reorganize Air Surgeon's Office

Gen. David N. W. Grant, the Air Surgeon, effective August 15.

Brig. Gen. Glenn succeeded Col. Walter S. Jensen, who has been assigned to an important post overseas.

Other new assignments include those of Col. Henry C. Chenault, executive officer, who has been named director of professional services, Col. Oliver K. Niess, base surgeon and commanding officer of the Regional State Hospital, Mitchel Field, New York, who has been named director of administration, and Col. Richard L. Meiling, who will act as special assistant to the Air Surgeon.

The reorganization places the Director of Ad-

ministration over the Operations, Personnel, and Supply Divisions, while the Director of Professional Services will supervise the Professional, Aviation Medicine, Convalescent Training, Research, and Statistics Division. Two divisions have received new designations. The Medical Services Division will be called the Professional Division, and the former Professional Division will be known as the Aviation Medicine Division.

The status of the division chiefs remains un-

Col. George L. Ball, Col. Howard A. Rusk, Col. George F. Baier, III, Operations Division; Col. E. L. Gann, Personnel Division; Col. William P. Holbrook, Professional Division; Col. Lloyd E. Griffin, Research Division; Col. Joseph Berkson, Statistics Division; Col. Gustave E. Ledford, Supply Division, and Maj. William H. Perkins, Office Services.—J.A.M.A., Sept. 16, 1944

### Competition for Prize Essays

The Merrit H. Cash Prize and the Lucien Howe Prize will be open for competition at the next Annual Meeting of the Medical Society of the State of New York.

The Lucien Howe Prize of \$100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The Merrit H. Cash Prize of \$100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York, who at the time of the competition are residents of New York State.

The following conditions must be observed:

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the Committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York "to be published as it may direct."

All essays must be presented not later than February 1, 1945, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 292 Madison Avenue, New York 17, New York.

CHAS. GORDON HEYD, M.D., Chairman  
Committee on Prize Essays

# Woman's Auxiliary

To the Medical Society of the State of New York

## County News

**Broome County.** The Women's Auxiliary to the Broome County Medical Society met in the Nurses' Home, Ideal Hospital, Endicott, recently.

Mrs. Manuel M. Monserrate, president, presided at the business meeting. Mrs. Harold W. McNitt, chairman of the war-bond drive, outlined plans for her workers in the present campaign.

Mrs. Charles R. Seymour gave a report of the Fall meeting of the State Executive Board, held in Buffalo last month.

Congratulations were extended to Mrs. Goode R. Cheatham, a member, on being chosen as one of the outstanding women in the community in the recent awards presented by the women's clubs of the Triple Cities.

It was announced that on December 12 the county medical society will entertain auxiliary members at dinner in the Binghamton Club. Wives of doctors in service will be guests at that time.

Following the business meeting, the group played cards and refreshments were served on a table arranged with pink and white chrysanthemums flanked with white tapers in crystal holders.

Endicott members serving as hostesses were Mrs. John Kane, Mrs. R. D. Mead, Mrs. M. W. Welch, Mrs. J. A. Kalb, Mrs. F. G. Moore, Mrs. J. D. Tocco, Mrs. J. MacD. Mallory, Mrs. John Malia, and Mrs. Cheatham.

**Nassau County.** At the regular meeting of the Nassau County Auxiliary on October 31, in the Nassau Hospital Auditorium, Miss Mildred Montag, director of the School of Nursing at Adelphi College, and representative of the Nassau County Nurse Recruitment Committee, spoke on nurse recruitment; the second speaker was Lt. Marie Griggs, of the Naval Reserve Nurse Corps, who told of her experience during fourteen months of duty in the Aleutian Islands. The speakers were introduced by Mrs. Freeman Miller, of Freeport, the program chairman. Mrs. Louis A. Van Kleeck, of Manhasset, presided.

The November meeting of the county auxiliary was held on Tuesday evening, November 28, at 8:15 p.m., in the Nassau Hospital Auditorium. The speaker was Dr. Frederic E. Elliott, whose topic was "United Medical Service, Inc." This is the name of the voluntary medical expense insurance plan which

is endorsed by our local and state medical societies.

The December meeting was a Christmas party on December 12 at 8:30 p.m. Members brought toy for the foster children of Nassau County.

On December 9 there was a dinner dance with the county medical society at the Garden City Hotel at 8:30 p.m.

During the threatened poliomyelitis epidemic members of the Auxiliary volunteered to help in the keeping of records of cases brought to Meadowbrook Hospital. Under the leadership of Mrs. S. Alto Dallgaard, two members reported daily for morning or afternoon sessions. Some of the women who participated are: Mrs. Robert M. Bogue, Mrs. Arthur D. Jacques, Mrs. Ralph E. Perry, Mrs. Eugene J. Miele, Mrs. George S. Comstock, Mrs. G. Border Granger, Mrs. Henry Buel Smith, Mrs. Benjamin W. Seaman, Mrs. Eugene H. Coon, Mrs. John M. Quinn, Mrs. William G. Burke, Mrs. Arthur C. Martin, Mrs. Albert M. Bell, Mrs. Byron D. St. John, and Mrs. Louis A. Van Kleeck.

**Schenectady County.** The auxiliary to the Schenectady County Medical society met on October 2 at the Hotel Van Curler in Schenectady. Mrs. Arthur Congdon presided. Dr. Charles F. Rourke, president of the medical society, addressed the meeting. Mrs. Rebekah Hash Toller, of the Schenectady Public Library, reviewed several current books, including *The World of Washington Irving*, by Van Wyck Brooks, and suggested books for Christmas giving.

Those attending were Mrs. D. Howard Lester, Mrs. Thomas G. Adinolfi, Mrs. Funston J. Eckels, Mrs. J. H. Kalteux, Mrs. Joseph L. Cirincione, M. F. Leslie Sullivan, Mrs. N. H. Rust, Mrs. Fred C. Reed, Mrs. A. N. Crouch, Miss Katherine Warner, Mrs. Albert W. Greene, Mrs. James E. Smith, Mrs. W. F. MacDonald, Mrs. G. Marcellus Clowe, Mrs. A. H. Congdon, Mrs. William J. Jameson, Dr. Debora C. Hornby, Mrs. Edward B. O'Keefe, Mrs. Roland L. Faulkner, Mrs. Ralph J. Hotchkiss, Mrs. Donald Nitchman, Mrs. Walter J. Reinach, Mrs. A. A. Samorini, Mrs. Charles F. Rourke, Mrs. Gomer Richards, Mrs. James M. Blake, Mrs. Michael Slovak, and Mrs. Herman Galster.

## CHRISTMAS SEAL SALE UNDER WAY

Wartime prevention and control of tuberculosis and diphtheria show encouraging progress, according to a joint statement by Judge Peter Cantline, of Newburgh, and George J. Nelbach, of Yonkers, chairman and executive secretary of the Committee on Tuberculosis and Public Health of the State Charities Aid Association.

The Association, with its 62 county and city tuberculosis and health associations, is the sponsor for the 1944 Christmas Seal sale now under way to provide funds for cooperative public health activities in the State.

## HADASSAH AIDS TUBERCULOSIS FIGHT

At the thirtieth annual convention of Hadassah the Women's Zionist Organization of America, held in Cleveland, Ohio, in November, an appropriation of \$900,000 was made for medical work, including the initiation of a building fund for a new 250-bed tuberculosis hospital which the group hopes to erect soon in Palestine as the first step in its postwar health program for the Yishub. The new hospital will be an integral part of the Rothschild-Hadassah-University Hospital, which is the chief unit of the Hadassah Medical Center on Mt. Scopus, outside of Jerusalem.

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# Books

Books for review should be sent to the Book Review Department at 1313 Bedford Avenue, Brooklyn, N. Y. Acknowledgment of receipt will be made in these columns and deemed sufficient notification. Selection for review will be based on merit and interest to our readers.

## RECEIVED

**A Laboratory Manual of Physiological Chemistry.** By D. Wright Wilson. Fifth edition. Octavo of 269 pages. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$2.50.

**The Practice of Medicine.** By Brig. Gen. Jonathan Campbell Meakins, M.D., (MC), Royal Canadian Army. Fourth edition. Quarto of 1,444 pages, illustrated. St. Louis, C. V. Mosby Co., 1944. Cloth, \$10.

**Global Epidemiology. A Geography of Disease and Sanitation.** By James Stevens Simmons, M.D., Tom F. Whayne, M.D., Gaylord West Anderson, M.D., Harold MacLachlan Horack, M.D., and collaborators. Vol. I. Part One: India and the Far East. Part Two: The Pacific Area. Octavo of 504 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1944. Cloth, \$7.00.

**Diseases of the Digestive System.** Edited by Sidney A. Portis, M.D. Second edition. Octavo of 932 pages, illustrated. Philadelphia, Lea & Febiger, 1944. Cloth, \$11.

**The Radiology of Bones and Joints.** By James F. Brailsford, M.D. Third edition. Octavo of 440 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$12.

**Plaster of Paris Technic.** By Edwin O. Geckeler, M.D. Octavo of 220 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$3.00.

**Malaria: Its Diagnosis, Treatment and Prophylaxis.** By Col. William N. Bispham, M.D., U.S.A., Retired. Octavo of 197 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$3.50.

**The Blood Pressure and Its Disorders Including Angina Pectoris.** By John Plesch, M.D. Octavo of 149 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$4.50.

**The Urinary Tract. A Handbook of Roentgen Diagnosis.** By H. Dabney Kerr, M.D., and Carl

L. Gillies, M.D. Duodecimo of 320 pages, illustrated. Chicago, Year Book Publishers, Inc., 1944. Cloth, \$5.50.

**The Diseases of the Endocrine Glands.** By Hermann Zondek. Fourth (second English) edition. Translated by Carl Prausnitz Giles, M.D. Octavo of 496 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$11.

**Operations of General Surgery.** By Thomas G. Orr, M.D. Quarto of 723 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$10.

**Manual of Military Neuropsychiatry.** Edited by Harry C. Solomon, M.D., and Paul I. Yakovlev, M.D., with the collaboration of Lt. Col. Wilfred Bloomberg, (MC), AUS, *et al.* Duodecimo of 764 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$6.00.

**A Textbook of Pathology. Pathologic Anatomy in Its Relation to the Causes, Pathogenesis, and Clinical Manifestations of Disease.** By Robert Allan Moore. Octavo of 1,338 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$10.

**The Diagnosis and Treatment of Acute Medical Disorders.** By Francis D. Murphy, M.D. Octavo of 503 pages, illustrated. Philadelphia, F. A. Davis Co., 1944. Cloth, \$6.00.

**Gynecological and Obstetrical Urology.** By Houston S. Everett, M.D. Octavo of 517 pages, illustrated. Baltimore, Williams & Wilkins Co., 1944. Cloth, \$6.00.

**Surgery of the Hand.** By Sterling Bunnell, M.D. Quarto of 734 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1944. Cloth, \$12.

**Essentials of Pharmacology and Materia Medica for Nurses.** By Albert J. Gilbert, M.D., and Selma Moody, R.N. Second edition. Octavo of 290 pages, illustrated. St. Louis, C. V. Mosby Co., 1944. Cloth, \$2.50.

## REVIEWED

**Medical Parasitology and Zoology.** By Lt. Col. and Flight Surgeon Ralph Welty Nauss, MRC, USA. Octavo of 534 pages, illustrated. New York, Paul B. Hoeber, Inc., 1944. Cloth, \$6.00.

In this volume of 534 pages the author has sought to present logically, simply, and concisely the salient things which the medical student and physician of today should know about medical parasitology. The text is written with the medical student in mind, and the approach is clinical rather than zoologic. The well-known standard works on medical parasitology are too detailed and extensive to be ideal textbooks for the brief courses on the subject offered by most medical schools, and it appears to this reviewer that the author has succeeded admirably in producing a shorter though adequate text appropriate for the usual medical school course. In addition to chapters on the pathogenic protozoa, hel-

minths, and arthropods of medical importance, there is included a section on poisonous reptiles and fishes. A good technical appendix is provided and there is an excellent glossary of terms peculiar to the subject, with their derivations, which should be particularly helpful to students who have trouble with nomenclature.

E. J. TIFFANY

**Strophanthin. Clinical and Experimental Experiences of the Past 25 Years.** By Bruno Kisch, M.D. Octavo of 158 pages, illustrated. New York, Brooklyn Medical Press, 1944. Cloth, \$4.00.

This book is an exhaustive review of the literature on strophanthin. Although much of the material is interesting and important, the value of the book is somewhat impaired by the controversial

[Continued on page 2756]

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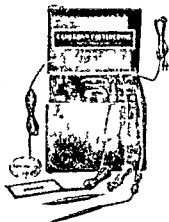
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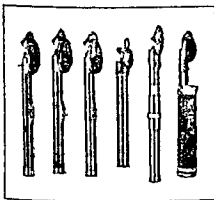
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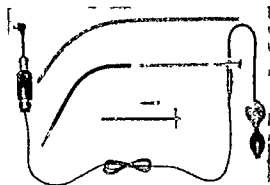


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[Continued from page 2754]

attitude of its author and by occasional obscurities in the text, due to unfortunate and inadequate choice of words.

For the present, however, it constitutes the only modern exhaustive treatment of the subject, and, as such, will be found useful by many.

ARTHUR SHAPIRO

**The American Illustrated Medical Dictionary. A Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc.** By W. A. Newman Dorland, M.D., Lt. Col., MRC, USA. Twentieth edition, revised. Octavo of 1,668 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth. Plain, \$7.00. Thumb-indexed, \$7.50.

The many virtues of this dictionary, pointed out in the JOURNAL's review of the last edition, have been retained and amplified in the current edition. There has been a thorough revision, with no important omissions.

The illustrations are few and to the point. The tables are good and the method employed in indicating pronunciation is highly satisfactory. In short, we can continue to recommend the *American Illustrated Medical Dictionary* to student and practitioner.

MILTON PLOTZ

**Psychosomatic Diagnosis.** By Flanders Dunbar, M.D. Octavo of 741 pages. New York, Paul B. Hoeber, Inc., 1943. Cloth, \$7.50.

The old controversy as to the relationship between psyche and soma, the riddle as to whether the egg or the chicken is the dominant force, has been resuscitated in recent years and now has become a topic of much discussion. Psychosomatic medicine is the new tent for this all-inclusive and far-reaching controversial subject.

Dr. Dunbar's volume on psychosomatic diagnosis is an excellent and thorough treatise. Its appearance is timely and it should be read by all those who are interested in probing into some of these syndromes.

A. M. RABINER

**Physical Medicine in General Practice.** By William Bierman, M.D. Octavo of 654 pages, illustrated. New York, Paul B. Hoeber, Inc., 1944. Cloth, \$7.50.

This work is a valuable contribution to physical medicine. The author divides his subject-matter into twenty-three chapters. He individualizes each modality of physical therapy in a separate chapter, taking twelve chapters, or practically two thirds of the book. He then has a chapter on occupational therapy. The general conduct of treatment takes another chapter. The remainder of the book, or nine chapters, is devoted to systems and their diseases. The book is well written, very readable, and a useful addition to our literature.

JOHN J. HAUFF

**Aesculapius in Latin America.** By Aristides A. Moll. Octavo of 639 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$7.00.

This book is truly amazing. Its author, former editor of the Spanish edition of the *J.A.M.A.*, unfolds the giant panorama of Latin American medicine in those vast lands which begin at the Rio Grande and end at Cape Horn. The reader will find many great names, and will derive much inspiration from the public and professional achieve-

ments of our medical friends in Central and South America. Today their great hospitals and medical schools yield to none in this country.

An excellent index and many illustrations add to the interest of the book.

CHARLES A. GORDON

**Physiological Regulations.** By Edward F. Adolph. Quarto of 502 pages, illustrated with diagrams. Lancaster, Pa., Jaques Cattell Press, 1943. Cloth, \$7.50.

The author says: "This is a monograph recording an investigation in quantitative physiology." In it he records data and conclusions based on a large number of quantitative observations on the way in which the body of the human or experimental animal reacts to increased loads which tend to displace it from its usual equilibrium. Although the reasoning is detailed and some of the derived concepts rather abstract, the conclusions are summarized and stated in clear and understandable language.

The general implications of this work are sufficiently significant to make it one of the classics of modern physiology.

ARTHUR SHAPIRO

**What Is Hypnosis?** By Andrew Salter. Duodecimo of 88 pages. New York, Richard R. Smith, 1944. Cloth, \$2.00.

This little book is an elementary presentation of the subject of hypnosis. There is a chapter devoted to the three different technics, which should be of some help to the novice. This book should interest those who wish to acquire an elementary knowledge of this subject.

IRVING J. SANDS

**Hydronephrosis and Pyelitis (Pyelonephritis) of Pregnancy.** By H. E. Robertson, M.D. Duodecimo of 332 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$4.50.

As an extraordinarily able and interesting recapitulation of all our knowledge of a very important subject, this little book from the Mayo Clinic should be appreciated by obstetricians and urologists. Actually it is a historical survey of the facts and theories concerned with dilatation and infection of the urinary tract in pregnancy.

The author offers his review with hesitancy, yet his method might well be imitated in a host of other conditions. This work is highly recommended.

CHARLES A. GORDON

**The Art and Science of Nutrition. A Textbook on the Theory and Application of Nutrition.** By Estelle E. Hawley and Grace Carden. Second edition. Octavo of 668 pages, illustrated. St. Louis, C. V. Mosby Co., 1944. Cloth, \$3.75.

Recognizing the fact that the busy physician usually has time to do little more than indicate the type of dietary treatment necessary for a patient, the authors of this book plan to give nurses the background and information necessary to fill in the outlined treatment. It is a good book. Given the information here, a nurse should be able to prepare meals that will both appeal to and meet the needs of the patient.

The sections on diet in special conditions and on diet therapy develop logically and clearly from the early chapters on normal nutrition. The information on the choice, preparation, and serving of foods is very adequate.

[Continued on page 2758]

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<sup>1</sup> Diseases of the Skin Sutton & Sutton, 1939, p. 99

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[Continued from page 2756]

The style is interesting, and the illustrations and color plates are well chosen and liberal. This revised edition, brought up to date on the newest findings and recommendations in nutrition, is recommended as serving its declared purpose most admirably.

ETHEL PLOTZ BERMAN

**Fundamentals of Internal Medicine.** By Wallace Yater, M.D. Second edition. Octavo of 1204 pages, illustrated. New York, D. Appleton Century Co., Inc., 1944. Cloth, \$10.

The second edition of Yater's *Fundamentals of Internal Medicine* has been thoroughly revised and has all of the virtues of the first edition and a number of new ones. As far as it goes, the book is reliable, up-to-date, and extremely intelligently organized.

Yater is the best review of internal medicine which I have seen, but there is considerable doubt in my mind that it can be safely used as a textbook in internal medicine. It has the great disadvantage that, no matter how competently written and organized, it accustoms the beginner to study from an outline. It can, therefore, be recommended for review purposes but not as a primary textbook.

Three new sections have been added: Symptomatic and Purported Treatment, Clinical Values and Useful Tables, and The Physician Himself, which greatly enhances the value of this volume. The last of the chapters is especially commendable. One can only regret, however, that no mention was made in this chapter of Cathell's book on *The Physician Himself* which influenced so many American doctors.

MILTON PLOTZ

**Urological Surgery.** By Austin Ingram Dodson, M.D., and others. Octavo of 768 pages, illustrated. St. Louis, C. V. Mosby Co., 1944. Cloth, \$10.

The book is a clear, concise, well-written, modern contribution to the field of urologic surgery. The

work is basically surgical therapy but embraces the pathologic and various diagnostic procedures as a necessary prerequisite. It is fully and vividly illustrated by Helen Lorraine. A few chapters are written by collaborators representative of their respective fields. The author has followed the more modern custom of listing references to the literature at the end of each chapter. The chief features of the book are those of surgical technic. These should prove useful and valuable as a ready reference to all those attempting to perform major operations on any part of the urogenital tract.

AUGUSTUS HARRIS

**Collected Papers of the Mayo Clinic and the Mayo Foundation.** Edited by Richard M. Hewitt, M.D., and others. Vol. 35, 1943. Octavo of 875 pages, illustrated. Philadelphia, W. B. Saunders Co., 1944. Cloth, \$11.

In spite of the war, the most recent Mayo volume maintains its high degree of excellence. It lives up to its aim to be of value to the general practitioner, the general surgeon, and the diagnostician. The reviewer was especially impressed with papers devoted to the study of esophageal pain, carcinoma of the gallbladder, metastatic carcinoid tumors of the ileum, chemotherapy in digestive disorders, the management of ulcerative colitis, the sedimentation rate in benign hypertrophy and carcinoma of the prostate gland, ovarian tumors, abnormal uterine bleeding, hyperparathyroidism, alopecia in Addison's disease, coronary disease, pathology in hypertension, orthostatic hypotension, venous thrombosis in obscure visceral carcinoma, lame backs, benign and malignant tumors of the bone, fibrositis, carcinoma of the lung, bronchiectasis, post-operative subarachnoid hemorrhage, sleep paralysis, and roentgenologic diagnosis of gastric cancer. All in all, the book deserves to be read from cover to cover.

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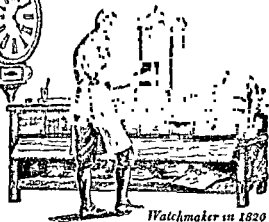
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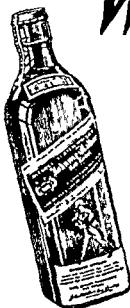
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